THE BUILDER

INCORPORATING

"ARCHITECTURE" AND "THE BRITISH ARCHITECT"

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ARCHITECTURE AND NATIONAL CHARACTER

THERE will be no finer thing arising out of this War than the stiffening of national character which is bound to show itself when the ordeal has passed, as it has already shown itself while the trial has been in progress. If we did not have the faith to believe this, we should have no heart for the present fight, and we might as well resign ourselves forthwith to the soulless regimentation which is what we are really resisting.

It is the good fortune of the architect that he is able to reduce the larger issue into terms which, though vast enough in themselves, yet take a clearer shape. Building has always told a story of the times in which it has arisen, and one from which all who follow may gain inspiration, or, when the wit of man has slept, find a warning. Upon the architect the impact of this fact is twofold in its relation to recent war experience and to his plans for the future. It creates an extra degree of bitterness against the savage destruction of history that has already taken place, and it gives him a new determination that the story which he will have to write shall be a worthy one, fit to stand in relation to the Empire's "Finest Hour."

There is no doubt whatever that we are keyed up to the occasion, and that the diffidence with which we certainly do approach our task does not measure any weakness of character but rather emphasises the sincerity of the times. That diffidence—natural as it is whenever human beings face tasks which seem to need superhuman capacity—may prove to be the most difficult thing which we have to handle, and we shall have to stiffen our resolution to overcome it. We are already in its grip, and the evidence that we have yet to make the best of it continues to reappear, particularly when we face up to the problem of making good the destruction of historical centres.

We can see something of it in the remarks which the Bishop of Bristol recently made at a meeting of the Friends of Bristol Cathedral, which we reported in a recent issue. We shall all find little difficulty in agreeing with his regret at the destruction of those buildings which, as he said, were the material from which the spiritual life of the nation has been fed, and by which the national character had been inspired. But when he said that he could not venture to hope that a national character fed on the austerity of modern architecture could be quite the same as a character nurtured by those glorious mediæval buildings, there seems to be in such reflections an element of defeatism which is not only foreign to these stirring times, but unhelpful to us in the tasks ahead. It may be right to say that the national character will differ by the change of diet, but it must surely be wrong to assume that it must deteriorate—for whatever were the words used by the Bishop, there was no mistaking the misgivings behind them.

We think the Bishop has made several mistakes. The first is that of assuming that modern architecture means some clear-cut thing, as characteristic as the architecture of the pointed arch or the pendentive dome. The second is that of concluding that there is no progress or improvement ahead of modern architecture, and that we are physically and inherently incapable of rising to an occasion.

The first of these mistakes is excusable in a layman, for, indeed, it is one which is frequently made by architects themselves. The present is a transitional period; confusing as its outward evidences may be, they are no more so than must have been the case when late Norman builders resolved to build pointed arches, and before this revolutionary change had time to bring about the perfect harmony of Gothic vaulting. Modern architecture is not a mere essay in flat roofs and corner windows, and it may be that flat roofs and corner windows are about to be discarded. It is rather an experiment in expression, the result of which may be immediately round the corner.

But it seems to us that the second mistake is one to which we have a right to raise objection. Civilised life contains an infinite capacity for improvement, and the chief reason for slow progress is lack of incentive. Has there ever been a time when the incentive has been so pressing and so stimulating as it is to-day! Surely never before in the history of man. Under its influence we are bound to believe that greater progress can be made in a few years than could be made in half a century of easy-going routine. That is really the thought that must hearten us in the task ahead, and which we must use to overcome diffidence wherever this quality threatens to encourage inaction.

We do not mean that this stern resolution may be perverted into an unholy joy that an old record has been wiped out; in fact, we owe it to ourselves and to posterity that the record should be maintained as clearly as the facts will allow. But we do mean that we must not allow ourselves to hide behind a glorious past. The past was once an active present of independent identity, and ours must be just as active and independent if it is to become in time the record of a great age.

We would, therefore, urge that our lay friends, who show by their sorrow at the destruction of historical buildings that architecture does mean something real to them, should show also that other half of friendship which is constructive and encouraging. We look to them to regard us, not as some pigmy race which history should soon forget, but as men living in great days, worthy to live in them and resolved to show that modern history is worthy of record. We shall be half-way towards giving a good best if our friends preserve a faith in our capacity. We even urge them to be exacting in their demands on us, accepting nothing but the best.

We shall do better to look upon the war ruins not so much as the graveyard of the past, but as the cradle of the future, and we shall then need only the right faith in ourselves and in the future to show that we have the capacity to produce good out of the evil which others have wrought.

NOTES AND NEWS

Mr. Pepler's New Appointment.

The address of Mr. George L. Pepler, F.S.I., Hon.A.R.I.B.A., Chief Technical Officer for National Planning, is now Lambeth Bridge House, Albert Embankment, S.E.1.

German Town-Planning Dictatorship.

While in this country architects and others are urging the setting up of a Central Planning Authority, or even of a Ministry of Planning, in Germany a virtual town-planning dictator now is in a position of great power. This is Dr. Ing Todt. He already holds a position of tremendous authority, for he is Reichsminister of Armaments and Munitions. He is also Chief Controller of the Building Industry throughout the whole of Germany, and is General Inspector of German Road Transport. In fact, he is Lord Reith, Lord Beaverbrook, and Colonel Moore-Brabazon all rolled into one. He has now been appointed, in addition, General Inspector for the German Water and Power Industries. The argument in favour of one man holding all these appointments at the same time is that he will be able to make sure of centralised planning. This is regarded as essential in Germany, both for the immediate execution of the war and for the post-war period of reconstruction. It is also plain that the concentration of functions under the one official has led to a considerable simplification of administration.

Parliament and the R.I.B.A. Reconstruction Report.

In the House of Commons last week, Mr. A. Edwards asked the Parliamentary Secretary to the Ministry of Works and Buildings whether he had considered the recent report of the R.I.B.A. on the reconstruction of Britain; and what changes of policy were contemplated to give effect to this and other recommendations by competent authorities.

Mr. Hicks replied: Yes, sir. The Royal Institute of British Architects have made two interim reports—one on the necessity for a National Planning Authority and the other on the Development of War-time Housing. The latter does not directly concern the Minister. The former has been discussed with the Institute and is receiving the Minister's careful consideration in connection with the preparatory work for reconstruction.

Southampton's Redevelopment Consultant.

Professor S. D. Adshead, M.A., M.Arch., F.R.I.B.A., has been appointed consultant to the Southampton Corporation for the post-war redevelopment of the town. He will collaborate with Mr. H. T. Cook, Town Planning Assistant to the Borough Engineer.

Requisitioning of Buildings.

The results of the investigation by Mr. John W. Morris, K.C., into complaints made about the requisitioning of lands and buildings and about the operation of the Compensation (Defence) Act, 1939, in regard to payment for properties requisitioned have now been issued as a White Paper by the Stationery Office (Cmd. 6313), price 6d. net.

The Ecclesiological Society.

To-morrow (Saturday) the Ecclesiological Society will visit some of the City's damaged churches, under the leadership of Mr. Edward Yates, F.S.A. The party will meet at Mark-lane Station at 2.30 p.m.

Housing Centre Lunch.

The next Tuesday lunch meeting of the Housing Centre will be on September 23, at 13, Suffolk-street, when Dr. R. H. Thouless will speak on "The Cambridge Evacuation Survey."

Saxon Discoveries at All Hallows Church.

What is possibly the most dramatic discovery of Anglo-Saxon sculpture yet made in London has taken place at the Church of All Hallows by the Tower. The east wall of this church was blasted on December 8 last by high explosive, and three weeks later the structure was completely burned by enemy fire. The pillars and arches still standing were condemned as dangerous and pulled down. Among the débris, and evidently embedded in the masonry as a "filler," was found the stone to which two of the experts' reports refer. The original stone is now in the care of the British Museum. Other fragments, forming part of the same monument, have since come to light, and the search continues. A drawing of the stone is given on facing page.

SAXON WALL WITH ARCH OF ROMAN TILES, ALL HALLOWS BY THE TOWER, DISCLOSED BY THE FIRE OF 1940.
(See this page.)

The fire further disclosed a built-in Roman-style arch of equal interest and antiquity. It is illustrated on this page, and is taken from the booklet issued by the All Hallows Restoration Committee, over which the Constable of H.M. Tower presides.

The Rev. P. B. Clayton, Vicar, sends us the following notes: Mr. T. D. Kendrick, Keeper of British and Mediæval Antiquities in the British Museum, dates the Saxon cross in the first half of the eleventh century, and says that it is English work of a hitherto unknown London school, and very different from the contemporary Viking sculptures of London such as those from St. Paul's churchyard. The decorative scheme of the cross continues the original and traditional decoration of the Northumbrian standing-cross of the golden age of the Anglo-Saxon cross, for it bears figures, including those of St. Peter and (probably) St. Paul, a vine-scroll, a stylised but lively animal pattern, and interlace, and also an inscription, which Mr. C. A. Ralegh Radford, F.S.A., has read as Earconworth, possibly a relative of the earlier Earconwald, Bishop of London, and founder of the Abbey of Barking, Essex, who died in 694.

Commenting on the Saxon building, Mr. A. W. Clapham, President of the Society of Antiquaries, says that this newly discovered arch or doorway has certain well-defined characteristics. The head is turned in Roman brick, not set in true radial fashion, and edged on the upper face with bricks laid flat. The responds, where original, appear to have been built of comparatively small stone blocks. The features are all reproduced in the well-known church of Brixworth (Northants), generally ascribed to a date about 670. The irregular setting of the bricks is not necessarily indicative of inexperienced mason's work, as it occurs also in late Roman work built by competent masons or bricklayers. The presumption is that the work at All Hallows belongs to the pre-Danish period, perhaps that of St. Earconwald himself.

IN 1916.

From *The Builder*, September 15.

Building Work in Paris.—An interesting venture [in view of the war-time difficulties] was that, therefore, made by the Société des Music Halls Parisiens (Mr. Alfred Butt, director) in deciding to go on with the construction of their new music-hall in the Rue de Mogador at Paris. . . . Mr. Bertie Crewe, architect of the London Opera House, is the architect of this new music-hall . . . and the general building contractor, Mr. F. G. Minter, of Putney, has contrived, in spite of many difficulties which he met with at the outset of the work, to carry on the building successfully to its present stage of about half-completion. The architect, the contractor and the resident architect, Mr. Arthur Vye-Parminter, of Paris, may be said to be enjoying a unique experience of building work in Paris during the war.

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CORRESPONDENCE

Registration of Builders and its Effects.

To the Editor of *The Builder*.

Sir,—The building trade should give serious thought to the attentions it is receiving from the Government through the activities of the Ministry of Works and Buildings. Apparently the importance of the building and civil engineering trade is at long last realised in the high places. The national and local Press carries illustrated advertising matter urging building trade workers to greater efforts, and pointing out the basic importance of their work in the national effort. Many of us know that what is really required is correct information as to what is to be done, and some preliminary thought given as to the provision of materials at the right time and place; also some attention given to the needs of the man and a little less to the provision of luxury buildings for officials. This, however, is by the way. It is generally realised that the steps we are taking to win the war should be the start of further steps that will enable us to win the peace to follow. This being the case, it is important to realise the sort of steps we are now taking. The first thing that strikes one is the lack of any statement from the Ministry giving us a comprehensive idea as to what the plan is and where they are taking us. We want a plan and elevation. Builders, of all people, know the danger of attempting to work without such things.

We do not know, therefore, the reason for the compulsory registration of all building trade firms; this is a gigantic task, and one which, if it is really done, will absorb the labour of a great number of skilled technicians. What is it for? It is the second attempt in this direction taken in the last six months or so. A census has already been taken in co-operation with the Ministry of Labour; three divisions were covered, and, so far as I know, no use made of the information so collected at the expense of masses of paper, builders' time, and officials' work.

Then, again, although there is supposed to be a shortage of men, the policy of the Ministry of Works and Buildings is apparently only to place contracts with those firms who have large numbers of men on their books. They are, in fact, asking firms tendering to state numbers of men they can send to contracts if orders are placed.

The natural result of this is that contracting firms are forced to hold their men. As there is little check on cost, this can be done at the expense of the taxpayer, and, worse still, at the expense of other work which cannot proceed because men are kept standing about on jobs. The result of this policy is that work must tend to go more and more to the very big firms; this, in fact, is what is taking place. Apparently, in order to assist in this direction, small firms are being asked to place their staffs and men at the disposal of the big firms and so assist them to carry out the gigantic orders that have been thrust upon them.

Is it the policy of the Ministry that the peace should find us with the building trade monopolised in the hands of a few big firms, like the banking trade, for instance? Lord Reith has stated that he believes in public control of policy, but no public control of management. Is the sum total of all this that the management of the building and civil engineering trades shall be in the hands of a "big six"? This is actually what all steps being taken now are leading to. Are these steps deliberate, or is it just less trouble for the new officials at the Ministry to push out jobs to the people who loom big on the horizon?

The building trade and the country are entitled to know what is going on. I regard the present policy, if such it is, as dangerous to our war effort and catastrophic for the future. Is it a plan and is it deliberate? T. Braddock.

Wimbledon, S.W.19.

War Repairs and Builders' Profit.

To the Editor of *The Builder*.

Sir,—With regard to this controversy over the 2½ per cent. and 12½ per cent., we venture to submit that a remedy can easily be found, and that is by scrapping the present "Prime Cost Contract for Emergency Work," with its ambiguous and vague clauses, especially clause 23, and the "sliding scale" of percentages. The contract was drawn up long before those who had the making of it had the slightest idea what first-aid war damage repair work really meant.

Large builders and contractors will not entertain that type of work; they want something where materials and plant are placed on the spot, and they can get on with the job, not rushing from place to place in a half-mile radius, doing urgent jobs here and priority jobs there, rushing plant and men here, there and everywhere, and being at the beck and call of council and public, S.O.S.s and clerks of works.

When all is done and the "sliding scale" well applied, we discover that we have been working at a loss.

Is it not time that clause 23 was cancelled and the "sliding scale" for first-aid and protective work abolished? Surely we medium and small contractors are worthy of some recompense. We find, after making personal sacrifices, that the overheads are 8½ per cent., and amount to a further 1½ per cent. when having to rush plant and men about an extended area.

If another "blitz" comes we shall be expected to carry on, and be called unpatriotic if we do not, but there is no taste in nothing.

Another sore, medium-sized builder and contractor, P. T. J.

P.S.—Our contracts have been amounting to £4,000 to £5,000 in three months, which by "sliding scale" only allows 7½ per cent. gross.

Payment by Results: Bonus for Brickwork.

To the Editor of *The Builder*.

Sir,—I would refer to the somewhat curious reply given by the Ministry of Works and Buildings to your correspondent C. W. Claxton in your issue for September 5.

Mr. Claxton raised the question of different-sized bricks in relation to bonus assessment, pointing out that four hundred bricks laid in the North exceeded by almost 10 per cent., in area, an equivalent number laid in the South.

This fact affects other issues than bonus, and before justifying this assertion, present the following facts based on the supposition that a certain number of Northern large-size bricks have been laid and that an equal number of smaller Flettons have been laid, in the South, in a similar period:—

(a) The Northern man will have completed almost 10 per cent. more brickwork;
(b) He will have handled about 15 per cent. more in weight of bricks (his labourer will have done the same);
(c) His labourer will have erected 10 per cent. more scaffolding;
(d) He will have incurred less in overheads;
(e) He will have speeded up his particular war effort by 10 per cent.;
(f) He will receive the same amount of bonus as his Southern counterpart having laid only the same number of bricks.

Allow me now to quote the Ministry's reply to Mr. Claxton's query:—

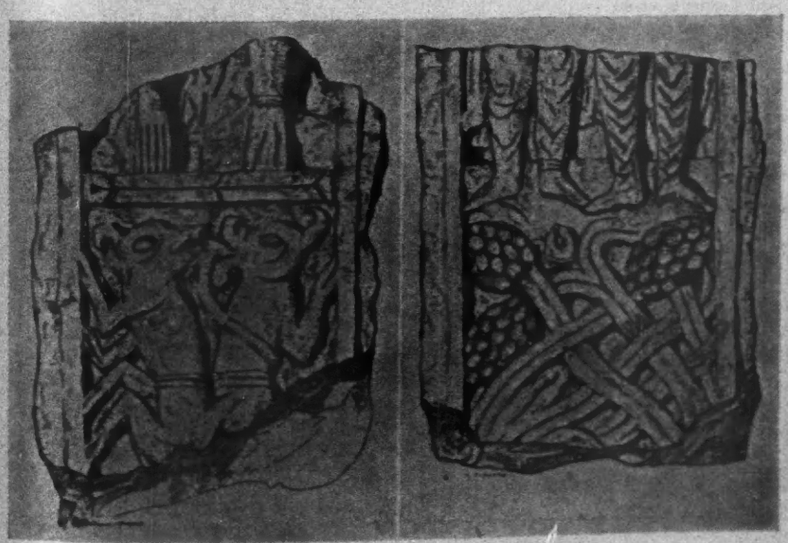
"It was considered that, while a greater area is covered by the Northern brick, this difference was not of sufficient magnitude to warrant an increase of the basic figure."

North-country bricklayers will appreciate, no doubt, this "finding" of the Ministry, as they will also the "plus man" compliment paid them, but is it not unreasonable to expect them to forfeit two shillings in the £ for increased output?

Why not eliminate any and all disputable points by giving basic figures in volumes instead of numbers of bricks?

N. Jackson.

4, Longfield-avenue, Stone, Staffs.



PART OF A SHAFT OF A SCULPTURED SAXON CROSS.
Discovered during the clearing of the ruins of All Hallows by the Tower. From a drawing by Mr. A. A. Moore. (See facing page.)

WAR-TIME BUILDING PRACTICE

By R. Cotterell Butler, A.R.I.B.A.

64—WAR-TIME AND POST-WAR REHOUSING: CONSTRUCTION—5.

THE POTENTIALITIES OF, AND LIMITATIONS TO, MECHANISED BUILDING CONSTRUCTION IN THE FACTORY AND ON THE SITE.

THE use of elaborate mechanical plant for handling structural elements and mixing materials is now a commonplace occurrence in connection with large building operations generally, and particularly those involving multi-storey erection. Naturally, the practicability of extensive mechanisation depends very much upon the size of the project, and in view of the probable scale of post-war and war-time reconstruction work, the general question of the potentialities of extensive mechanisation in building construction is a most important matter.

In discussing building technique it is often difficult to decide whether general or particular considerations should be considered first. It is quite logical to design on the basis of efficient structural elements, and from there proceed to consider methods of erection. However, in this instance, since the whole project of extensively mechanised construction (for domestic dwellings) is largely a radical development, it would seem more logical to consider its possibilities as a whole before getting down to the problem of complementary structural design. Naturally one cannot neglect what experience of traditional construction has taught, but to get the best results, it is desirable to consider the question of mechanisation in as impartial a manner as possible.

THE OBJECTS OF MECHANISATION.

IN THE FACTORY. Everything is to be said for mechanisation of the most complete nature in the factory, wherever sufficient standardisation is practicable. Just as a vast "production" organisation has been brought into being to meet the demand for materials of war, in the same way the necessary co-ordination of requirements, supplies and processes may be arranged for the manufacture of buildings and building components.*

At this stage it is unnecessary to go further into factory problems, since the possibilities of applying "production methods" to a maximum is more closely allied to detail construction—the use of jigs, fixtures, etc., and the practical limits of prefabrication—than to the general question of mechanised erection with which we are primarily concerned here.

* At a later date it is hoped to illustrate a typical scheme for a "house factory" suitable for the production on a mass-production basis of entire dwellings involving the minimum of site work.

ON THE SITE.—The object of mechanisation in connection with large-scale building projects involving multi-storey structures have largely been the raising of building elements (*e.g.*, steel beams and stanchions) to the necessary height, and the efficient production and distribution of cement mortar, concrete, etc. To some extent these factors are also of considerable importance in small house construction on a mechanised basis, although the height factor is less important.

To consider the primary objects of mechanisation in detail:

1. **TO ENABLE LARGER OR HEAVIER BUILDING ELEMENTS TO BE ERECTED.**—The tendency in contemporary practice (quite apart from war-time questions) is fundamentally the use of lighter forms of construction. This does not necessarily mean the use of lightweight materials, but rather the use of materials more efficiently, so that stability is not determined solely by mass, and weather-resistance solely by bulk. With the development of prefabrication, while a given structure may not itself weigh more than an *in situ* constructed one, the building elements themselves being large and few in number may individually weigh much more than any single component element of the *in situ* building. In fact, the limitations to prefabrication consist almost entirely of the restrictions imposed by transport and erection facilities.

If, therefore, prefabrication is not to be limited solely to ultra-lightweight materials, the facilities provided by mechanical equipment capable of readily handling heavy elements must be employed; and even with lightweight building the size factor demands a considerable degree of mechanisation if anything like maximum prefabrication is to be used.

2. **TO INCREASE THE SPEED OF BUILDING OPERATIONS.**—Quite large prefabricated structural elements may be erected by manual labour alone and provided labour is available in sufficient quantities, maximum economy is not important, and time means little. But for the full advantages of prefabrication and all that goes with it to be appreciated, erection must be correspondingly speedy and efficient.

With advanced mechanical erection, work will necessarily have to proceed in a definite predetermined sequence, in

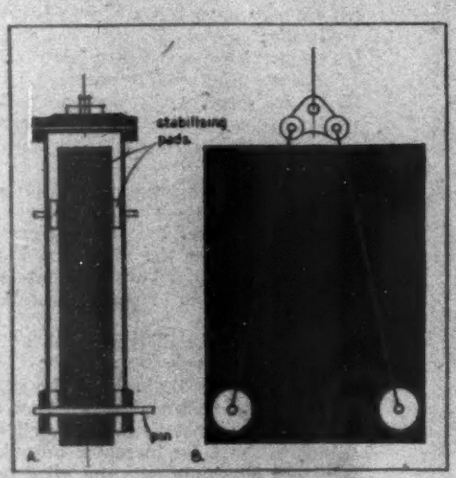


Diagram 1.—Cradle sling operating through slots in building element. Suitable for "mass" materials. (*a*) Diagrammatic section. (*b*) Elevation.

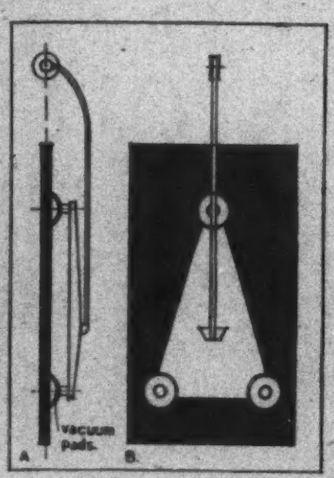


Diagram 3.—Vacuum pad grab. (*a*) Diagrammatic section. (*b*) Elevation.

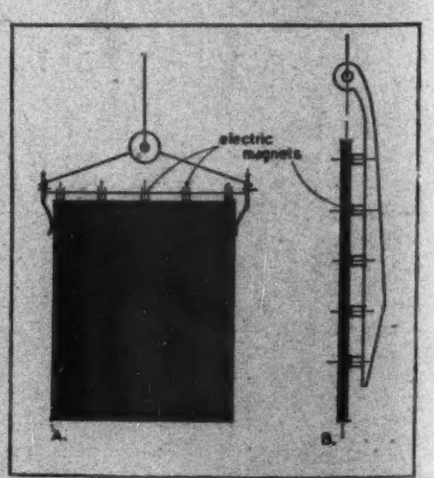


Diagram 4.—Electro-magnetic grabs for steel and iron. (*a*) Type operating on top of element. (*b*) Side operating type.

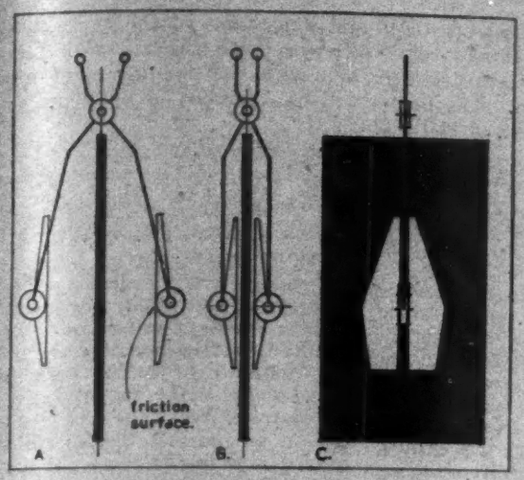


Diagram 2—Scissor grab for lightweight panels. (*a*) and (*b*) Diagrammatic sketches showing operation of scissor principle. (*c*) Elevation.

which the various erecting machines will operate on different structures at appropriate stages. Naturally it would be thoroughly undesirable for expensive plant to wait about on site for its operation stage to develop. General work would proceed upon organised lines, the actual time taken for mechanical erection being very small.

Mechanised erection, therefore, will not only increase the actual speed of erection of individual elements, but will, additionally, impose upon the building organisation the need for a fully worked out programme and thereby ensure every attempt being made to operate to schedule.

3. TO MAKE BUILDING CONSTRUCTION TO SOME CONSIDERABLE EXTENT INDEPENDENT OF WEATHER CONDITIONS.—In this country at least, building operations are considerably affected by weather conditions. This means that by lowering the time spent on *in situ* work, the amount of disorganisation which may be occasioned by rain or frost is much reduced. Recent examinations of identical building projects carried out in exactly similar ways but under different weather conditions have shown that not only has bad weather resulted in increasing the time required for erection, but greatly added to the cost of construction. In addition to reducing the time required for site-work, mechanisation, properly organised, enables many building operations to be carried out in weather which would make ordinary operations impossible, but this of course depends entirely upon the efficiency of the design of the erection plant, for, on the whole, an inefficient machine can cause far more dislocation than inefficient labour.

4. TO IMPROVE THE WORKING CONDITIONS OF THE BUILDING OPERATIVE.—Building operatives normally spend much of their time in the open air. This at first sight is a good thing, but unfortunately it has its disadvantages. In many cases trades are forced, for economic reasons, to work in the most inclement weather, with the result that the incidence of influenza, the common cold, and rheumatism in later life, is high among certain trades.

It is not suggested that to work under *indifferent* factory conditions—or worse—is preferable to working in the open even in bad weather, but it is certain that contemporary factory conditions with proper amenities are, as a whole, likely to provide better conditions than those operating in the building trade at the moment.

In peace time bad weather often means building operatives having to stand off, with consequent loss to the employee and inconvenience to everyone. Obviously, minimising site work and the use of all-weather techniques could almost entirely eliminate this.

THE LIMITATIONS TO MECHANISATION.

1. SIZE OF PROJECT.—The cost of plant for mechanised building is high, and the capital outlay thus involved cannot be justified without the full employment of the machinery over its "purchase period." Mechanisation—except, perhaps, of a very elementary order—cannot, therefore, be carried out except where projects of sufficient size are involved. This is most important where a specialised form of construction requires plant of a specific and not general type. Obviously, the capital outlay involved in obtaining an elaborate concrete mixer can be spread over many kinds of project, but that expended on a plant, say, specifically for erecting prefabricated chimney stacks, is a very different matter.

2. STANDARDISATION.—Specialised mechanical erection plant is the logical counterpart of standardised buildings, and the corollary applies equally. As above, general plant is applicable to many schemes, but not so special machinery. Since we are discussing mechanisation primarily in connection with large-scale building operations, it may be assumed that sufficient justification will exist in most cases for the production of plant for special operations, but it should always be remembered that wherever possible, *without destroying efficiency*, large-scale erection plant should be flexibly designed and therefore as adaptable as possible.

3. PLAN ARRANGEMENTS.—Elaborate machines designed to assemble structures have necessarily to be moved from position to position. Now, while their design should ensure that they may be as mobile as possible, the simpler their route in laying down—say, a group of detached dwellings—so much the better. This factor is not perhaps a strictly limiting one, but it does mean that the capabilities and limitations of the machine should be taken into consideration in planning site sequences.

The design of the plant should take into consideration the planning sequences required, and the planning should allow for the natural capacity of the plant.

4. STRUCTURAL DESIGN.—As in the above case, structural design requires development along lines suited to mechanical erection. However, since mechanisation is the logical outcome of prefabrication and not the reverse, few, if any, incompatible requirements are likely.

SITE MECHANISATION.

The potential number of possible constructional operations—at the moment manually operated—which might ultimately be mechanically performed is enormous; and no one can possibly foresee the ultimate end of extending manufacturing techniques at present limited to production engineering, to the building industry.

In the factory almost complete mechanisation of production is possible, and has already gone far in connection with very many building materials. It is, however, in *in situ* operations that greater development is important, since progressive mechanisation in the factory is already an established thing, and if *in situ* technics do not proceed parallel with it, the full economic benefits of modern mass-production methods will not materialise.

Potential *in situ* mechanisation would seem to involve:—

1. The erection of large-size prefabricated elements.
2. Fixing elements in position.
3. Carrying out ancillary building operations.
4. Feeding and distributing materials generally.
5. Operating special *in situ* building processes.

ERECTION OF ELEMENTS.

This involves the development of suitable mechanisms for grabbing and holding the elements, and the actual lifting and positioning machines.

GRAB AND OTHER HOLDING DEVICES.

(*a*) Grabs depending upon special fixing slots and nibs incorporated in the element itself.

(*b*) Scissor grabs, gripping by friction to the element surface and maintaining grip by the weight of the element.

(*c*) Suction pad grips, vacuum operated.

(*d*) Magnetic grab operating on steel.

Representative applications of these types of grabs are illustrated in the accompanying diagrams, and their application is largely self-explanatory. While each particular type is primarily applicable to a specific type of material, they must all have common characteristics:—

1. A grab must take up the least possible space, and offer the minimum obstruction to adjacent parts of the structure.

2. The design of the grab must enable the hoisting mechanism to develop full manœuvrability with the maximum accuracy.

3. The release mechanism (and to a less extent the grabbing mechanism) must enable rapid and effective attachment and removal.

The advantages and limitations of the types illustrated are closely connected with both the materials for which they are designed and with the hoisting plant operating them. The points will be discussed in detail in the next article.

(To be continued.)

OWNERSHIP OF ARCHITECTURAL DRAWINGS AND OTHER CONTRACT DOCUMENTS

We take the following from the August issue of the Journal of the R.I.B.A.:—

The addition of the War Damage Act, 1941, to the Statute Book would seem to convert into a practical problem something that has hitherto been regarded, perhaps, from a more academic point of view by many members of the architectural profession. In peace time there have been a few instances in which the ownership of architectural drawings and other contract documents has been called into question, but the War Damage Act has brought into prominence that which has been allowed in the past to remain in obscurity. For this reason the officers of the Practice Committee, in consultation with Mr. Sydney E. Redfern, the solicitor to the R.I.B.A., have prepared the following notes in order to assist members to understand the position created by the Act.

The War Damage Act provides for insurance of "goods" against damage by enemy action under two schemes. The "business scheme" is compulsory where the "goods" exceed the value of one thousand pounds, but voluntary up to that amount. The "private chattels scheme" is voluntary and provides free insurance up to two hundred pounds for a single person and up to three hundred pounds for married people, and any sum over these amounts that may be required by an insuree.

Insurable "goods" under the Act are therein defined and do not include "documents owned for the purpose of a business," and it is this definition that has brought to light the fact that many members are not at all clear as to the ownership of architectural drawings.

It is many years since the Courts decided that when the architect's fees have been paid the drawings must be handed over to the client because they are his property, though the architect has a lien on them pending the payment of the fees. In counsel's opinion on copyright he advised that "the actual plans and drawings, regarded as chattels, become the property of the employer when the architect has been paid the agreed fee. This in no way affects the copyright in them, *i.e.*, the right to reproduce them. The employer is probably entitled not merely to a set of finished plans, but also to all drafts and copies of them produced for the purpose of carrying out the contract. There is nothing to prevent the architect from retaining a copy of the plans for his own use, provided that this copy is entirely outside the fulfilment of the contract." The Board of Trade ruling under the War Damage Act is that architectural drawings *owned* by an architect are "documents owned for the purpose of a business" and are therefore excluded from the "goods" insurable under the "business scheme," and this ruling would appear to exclude from insurance the copies of the plans which counsel advises can be made and retained by the architect. But since, as has been said, the architect does not own the drawings, it follows that there is no duty on him to insure another person's property, and no reason for architects to complain about the exclusion of such drawings from the "goods" insurable under the Act. The architect must, however, give the client the opportunity of either taking possession of the drawings or of leaving them with the architect at his, the client's, risk. If the architect, whilst retaining the drawings, does not communicate with the client, the position is as follows. The architect is what is known as a bailee without reward, and is accordingly under obligation to take reasonable care of his client's property. The architect is under no obligation to retain the drawings, and whilst in his possession they are at the call and disposal of the client deliverable to him on demand. When applying the Statute of Limitations, the period named in the Statute would commence to run from the demand, and not from the date of deposit. Thus, if demand be made and uncomplied with for six years, thereafter the client would not be able to bring any proceedings in respect of the architect's failure to deliver the drawings. Manifestly, a considerable lapse of time, during which period presumably no discussion of the drawings had taken place between architect and client, would militate against any complaint of the client if the drawings ceased to exist, which complaint would be based on the architect's lack of reasonable care.

The drawings that become deliverable to the client on payment of the fees due to the architect are all those prepared for the carrying out of a contract. If the building has been erected, the drawings must be given up, and Clause 1 (*f*) of the Conditions of Engagement in the R.I.B.A. Scale of Charges does not in any way modify the legal position. It is only inserted for the purpose of securing to the client the copy drawings therein defined without any additional charge being made.

In addition to the drawings being the property of the client, the specification and the Form of Contract are also his, the architect merely retaining them during the continuance of the work for the purpose of carrying out his duties under the contract. When the architect's duties come to an end these documents must be handed over to the client. If the client intends to proceed with the building and the architect's services are dispensed with either before or after the signing of the building contract, the drawings and specification and other contract documents must still be handed over, subject to a lien on them against unpaid fees. When the architect's services are dispensed with after the signing of the building contract but fees remain unpaid, the proper course would seem to be for the drawings and other contract documents to be handed to the new architect appointed under the contract on an undertaking from him to hold them subject to the first architect's lien. In this way the building owner would not have his building delayed and the first architect's right of lien would be preserved. If, however, the first architect's fees have been paid there would be no question of lien, and the drawings and other contract documents must be handed over to anyone named by the building owner. If the architect's services are dispensed with because the project has been definitely abandoned, the client is still entitled, on payment of the appropriate fees, to delivery of such drawings as have, up to the time of abandonment, been prepared. It should be, perhaps, emphasised that the ownership by the client of the physical drawings does not affect adversely or otherwise the architect's right (if any) arising under the Copyright Act.

Unpriced bills of quantities are also the property of the client when the fees have been paid, but the pricings of a contractor are not the client's property. They belong to the contractor. Such priced bills of quantities, therefore, only become available to the client in the event of their being required for the purpose of arbitration or litigation, though under the R.I.B.A. Form of Contract the client has the right to inspect them whilst in the architect's or surveyor's custody. At the completion of a contract such priced bills should, strictly speaking, be returned to the contractor in exchange for all drawings and documents supplied to him for the carrying out of the contract. Neither the architect nor surveyor has any right to withhold contract documents required for the purpose of arbitration or litigation.

The position with regard to drawings in course of preparation by the architect is not quite so clear. Presumably the client could tender the appropriate fees at any stage of the preparation, and the incomplete drawings would then have to be handed over. If during preparation the drawings are destroyed by enemy action, it may be that the loss would fall upon the architect, the risk apparently not being insurable by him under the "business scheme" of War Damage Act.

"THE BUILDER"
PAPER RESTRICTION

So great has been the demand for *The Builder* that the printing order has had to be increased every week this year, and even then the paper has been out of print before it has left the printers, and hundreds of would-be readers have been disappointed.

Everything possible has been done to avoid cutting down supplies, and the actual paper has been thinned down to its absolute minimum. If, therefore, some weeks a newsagent is unable to supply a copy, he is not to blame, as he is doing the best he can in a very difficult situation.

Subscribers would greatly help by passing on their copy when they have finished with it. We know of many cases where from 6 to 12 people share one copy of *The Builder* every week, and a slip is pasted on the cover which each reader initials, and then the copy itself is returned to the original subscriber for binding.

All our back issues for the past 18 months are out of print and we are only allowed to supply the weekly issue to order.

If it is necessary to have a copy of *The Builder* and it cannot be obtained, the Publisher will do his utmost to help, provided a direct subscription is taken out from this office (The Publisher, *The Builder*, Ltd., 4, Catherine Street, London, W.C.2.). Rates are as follows: 12 months, 46s. 6d.; 6 months, 24s.; 3 months, 12s. 6d.

THE ARCHITECTURAL ASSOCIATION

PRESIDENTIAL ADDRESS BY MR. KENYON.

A MEETING of the Architectural Association was held on Tuesday, at 36, Bedford-square, W.C.1, when MR. ARTHUR W. KENYON, F.R.I.B.A., delivered his inaugural address. MR. JOSEPH HILL, F.R.I.B.A., Past-President, occupied the chair.

Taking for his subject "The Power of Unity and Efficiency," the President said that while the great industrial towns were being developed, the country towns marched with the times. Time-honoured buildings were ruthlessly destroyed there, and the English village, built with such care and thought when craftsmanship was a joy, was ruined. No united voice came from architects, sculptors and painters, saying "Stop—enough of this!" The peak of industry arrived, when the money made could be spent, and it brought the more polite form of Swiss chalet architecture with half-timber and gables, while for the shops there were masses of plate glass. The smaller houses emulated their betters, but were more tightly packed, and with no room for gardens and open spaces. To the architects he would say: "This must never happen again; we must see that it cannot happen." But he seemed to hear a voice asking: "Why blame the architect? What could he do against all this mad rush of materialism?" The architect did nothing because there was no concerted opinion and therefore no concerted action.

Coming to recent times, the lecturer said that since the last war working-class houses had been looked after and there had been a marked improvement. But the demand for middle-class houses had been great also, and here the speculative builder had stepped in, not going to the architect for his designs but finding out for himself what the people wanted. He had built cheaply and in great numbers. A popular outcry had arisen against his methods, and eventually architects had said that something must be done and had set up voluntary panels to "vet" plans and elevations, while building societies became more careful and required that the houses they advanced money on should conform to a standard. Town-planning officers had been appointed. But had there ever been any united effort put forward to combat the evil? Had the country ever been able to get a constructive lead from the whole body of architects speaking with one voice which people could understand and trust?

Speaking of other features of this period, Mr. Kenyon said: There was at the same time a big rush of factory development, fine handsome buildings taking up frontages on the new arterial roads, built quite regardless of where the workers were to live. The workers would follow, and they did—in the speculative houses. No wonder the people interested in social welfare and orderly thinking went to the other extreme and started garden cities, which were looked upon by the masses as places for cranks with long hair and sandals to live in. This phase also could happen again.

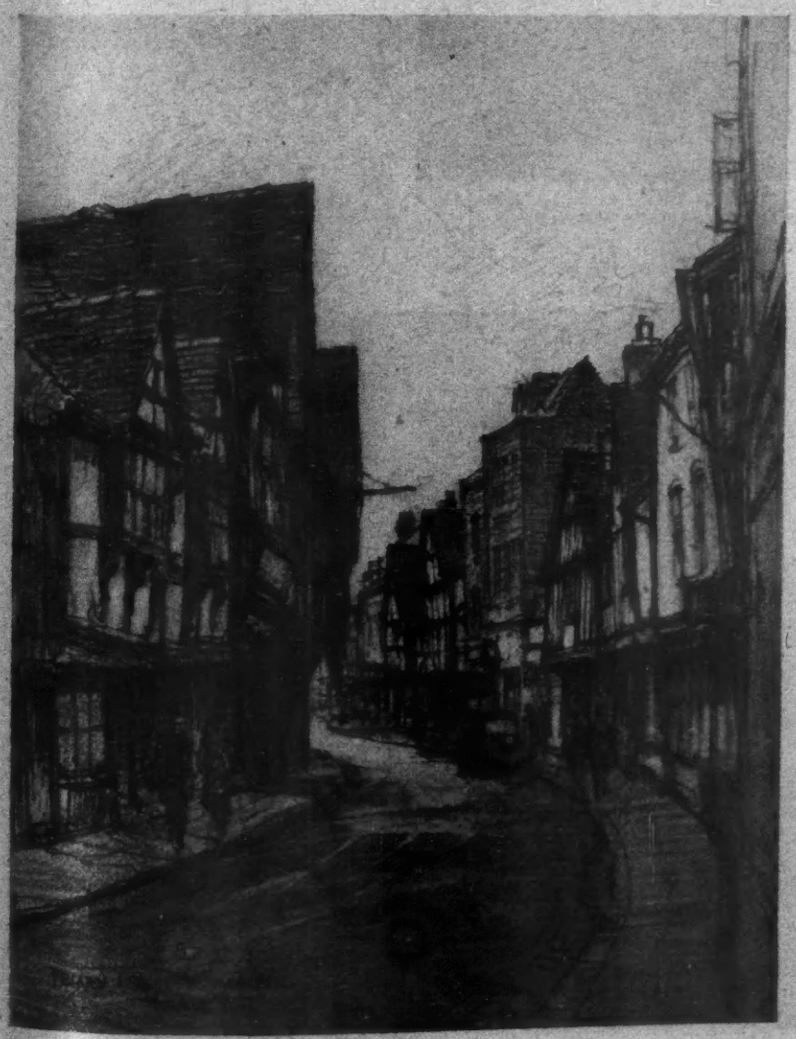
Coming to the barriers that prevented unity, Mr. Kenyon put first that between north and south. That barrier must be broken down. The provincial architect did not like the London architect to go into his district, do the plums of the work and leave the provincial to do the casual jog trot, but no one should object to the provincial doing work in London. There must be no barrier between architects themselves. The next barrier was that between architects and kindred professions. Engineers had played a very big part in planning buildings during the present war. He was not afraid of engineers taking the rôle of architects any more than he was afraid of architects posing as structural and scientific experts. The two professions were complementary.

The President continued: My next barrier to unity is the official architect. I have, fortunately, had a unique opportunity during this war of coming into contact with many official architects and others, having worked with four branches of His Majesty's Government, and I am pleased to say I am able to number amongst my friends many official architects in London and elsewhere, and should like to say that I have a great admiration for them and their works. In fact, I am amazed that such good work should have been able to be produced. But I am convinced that the machinery necessary to run a department of Government architects is by its nature so heavy and slow-moving, though constant in its many parts, that it will not be able to compete with the stream-lined vehicle which will be necessary to speed along the length and breadth of this country in reconstruction. There is a big rôle for the official architect to play, and it is alongside the private architect, both working in unison.

Mr. Kenyon's last point on unity concerned the various societies and institutes of the architectural profession. Many years ago, he said, there had been two societies which had eventually united into one. But then another society had sprung up, forming a division of societies both working for the same end, but disagreeing on points of principle. Offshoots from these bodies had formed themselves into groups working with specific aims but in different directions. He believed there would always be groups forming; he thought it was healthy that such groups should form, for they did extremely valuable work and were keen, fresh and vigorous. But he wanted to see their work pooled to the common good.

Turning to architectural efficiency, the President said: "To have faith in our calling and faith in ourselves we must be efficient in our work individually and collectively. We have a great work before us when this war is over, more than any other profession. We must therefore be efficient as individuals as well as a whole. Are we efficient? It may be presumptuous of me to say it, but I do not think we are. I do not think we give the service to our clients we should give. We have been considered as the designers of elevations, as the persons who put on the frills. This has been said time and time again by so-called enlightened people since this war broke out. We know this is wrong; we say they are ignorant and that they don't know what an architect does. Why don't they know what we do? Is it because we are so shy in letting the public know our qualifications? If it is, then it is time we did something about it" More service was required of the architect. Clients expected him to tell them what a building would cost and to see that it did not cost more. At the same time they expected good design and efficient building.

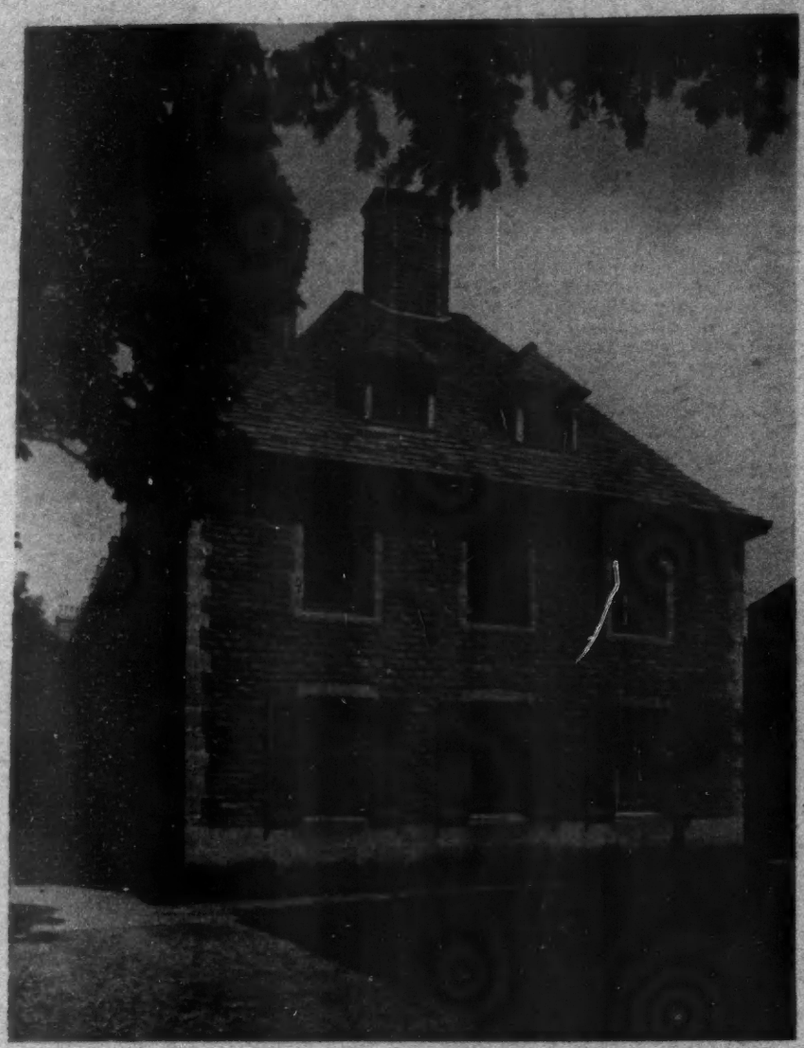
Mr. Kenyon said that if the profession was to be efficient the schools must teach efficiency in construction, design, scholarship, administration and leadership. The efficiency of the profession could be increased by forming groups so that work might be done in a collective spirit. In such an office there might be a place for the quantity surveyor to guide work through its financial stages, and there should be someone in the office with knowledge of the other technical necessities so that economy in planning of the whole would be accomplished without one becoming subservient to the other. This was a much bigger thing than the ordinary partnership scheme. There would come a great opportunity to consider the young architects now serving with the Forces, to stretch out a hand and welcome them into one group or another where efficiency and good architecture was to be the aim of all.



FRIARY STREET, WORCESTER
From a recent Pencil Drawing by Mr. Joseph Pike.

ADDITIONS TO WORCESTER COLLEGE, OXFORD.

MR. WILLIAM G. NEWTON, M.C., M.A. Oxon., F.R.I.B.A., ARCHITECT.



THE SOUTH FRONT. Below : THE WEST FRONT, FROM GARDENS.

VIEW OF NEW BUILDINGS, FROM SOUTH-WEST, SHOWING RELATIONSHIP TO OLD WING.

REQUIREMENTS.—15 OR 16 SETS OF rooms (one for a Fellow), 12 bathrooms; w.c. block for whole college; rearrangement of adjoining kitchen buildings.

SITE.—East end of Worcester garden, under the old 14-ft. high boundary wall.

SOLUTION.—A two-storey block, with a third floor in the roof. Approach down existing quad on the north, and also from the garden. Building is kept long and low, to be in harmony with the old wing of college buildings overlooking the gardens and adjoining the site on the north. The flat-roofed w.c. block backs on the old 14-ft. boundary wall. These and the bathrooms are lit by clerestory windows opening over the w.c. corridor. Above these bathrooms the main building is set back behind a long balcony with stone parapet and flower-box coping. Only rooms of secondary importance and staircases look out this way. The sitting-rooms and bedrooms look out on the gardens to the south, west or north (but north rooms have also an east window). The plan is a combination of the staircase and the corridor plan. On the ground and second floor the corridors run through. On the first floor the Fellows' set of rooms forms a fire-stop (the floors are also all fireproof).

As to the external dress generally, the walling is of axed Cotswold stone, the dressings Clipsham and Weldon, the roof stone-slated, and the windows are double-hung sashes (a standardised building unit with 250 years of experience behind it). They are of teak. On to the central loggia in the west elevation the Fellow's bedroom opens with a sliding collapsible steel window. The archway under can be closed by a wrot-iron gate, allowing fresh air into the central corridor, but keeping the building private (the gardens are open at certain hours to the public).

The normal partition between adjoining bedrooms is a specially designed hanging cupboard (in cedar), half facing into each bedroom. The oak staircase, with its owl-capped newels, is lined with oak shiplap boarding, and the treads are designed to be removable when worn down by removing cupped screws in the risers. The corridors have Granwood floors and dadoes. Some of the rooms are panelled in oak and cedar, others lined with Empire veneers. To the sitting-rooms there is a twin architrave, so that the arrangement is neat and compact whether the "oak" is "sported" or not.

Heating is by coal (or wood) fires as well as electric heaters. This fact gives a reason for the dominant stacks with their lightly splayed angles. All fireplace throats have a slotted concrete slab arranged in accordance with the B.R.S. recent pamphlet on the prevention of smoky chimneys.

The rooms are individually furnished, the furniture being made by an Oxford firm and chosen by a committee of the Fellows. There are louvred shutters to the south windows for the sun, and to the east windows as a protection against traffic noise in Worcester-street. The painted coats over the west archway and the north-east entrance door are the arms respectively of Lord Nuffield (whose generosity permitted the building) and of the Provost, Dr. Lys. They were executed by Mr. Esmond Burton.

The general contractors were Messrs. T. H. Kingerlee and Sons, Ltd., of Oxford. Sub-contractors and suppliers included: Limmer and Trinidad Co., asphalt; Trussed Concrete Steel Co., Ltd., reinforced concrete; Finnis and Ruault, bricks and slates; Hollis Bros. and Co., Ltd., woodblock flooring; Granwood Flooring Co., patent flooring; Semtex, Ltd., plastic rubber floors; William Briggs and Sons, Ltd., waterproofing materials; J. H. Nicholson and Co., Ltd., hot water supply; Conway and Co. and Matthews and William Smith, grates; Fred G. Alden, Ltd., electric lighting and power installation; Joseph Chater and Sons, Ltd., sanitary fittings; Walter Cassey, Ltd., door and window furniture; Wenham and Fowler and Crittall Manufacturing Co., Ltd., casements; Galsworthy, Ltd., wrought iron gates; Modern Surfaces, Ltd., "Muroglaze"; Aldous and Campbell, Ltd., lifts; and Gradidge Construction Co., Ltd., construction of the fives court.

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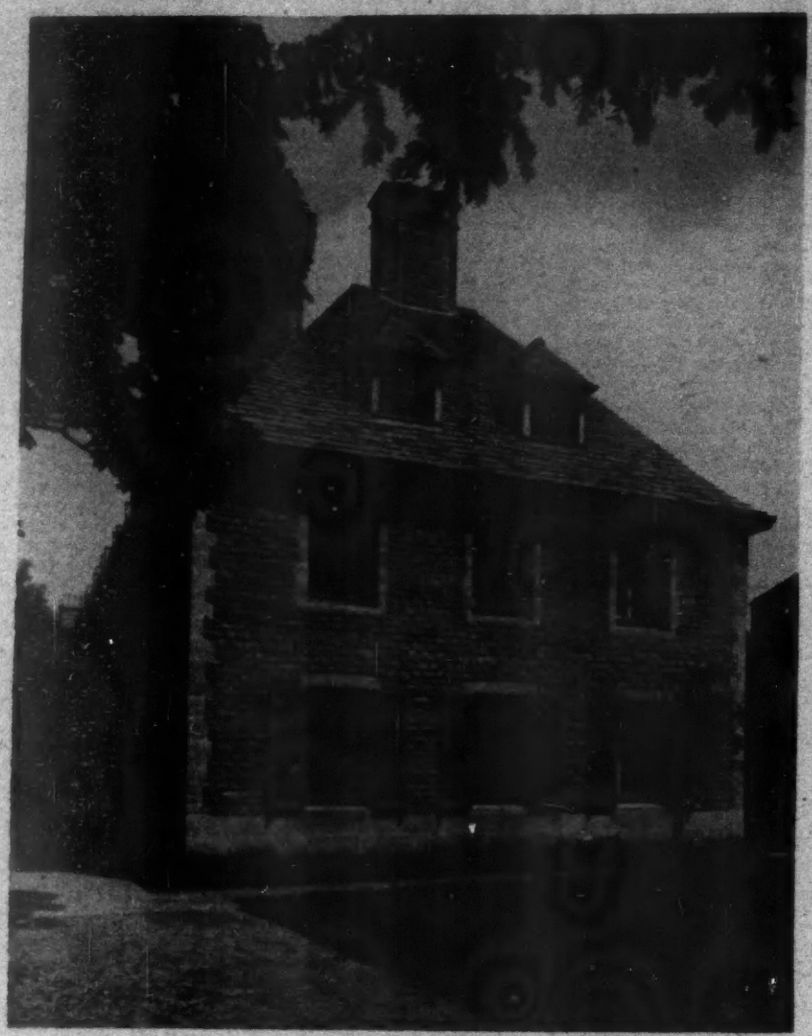

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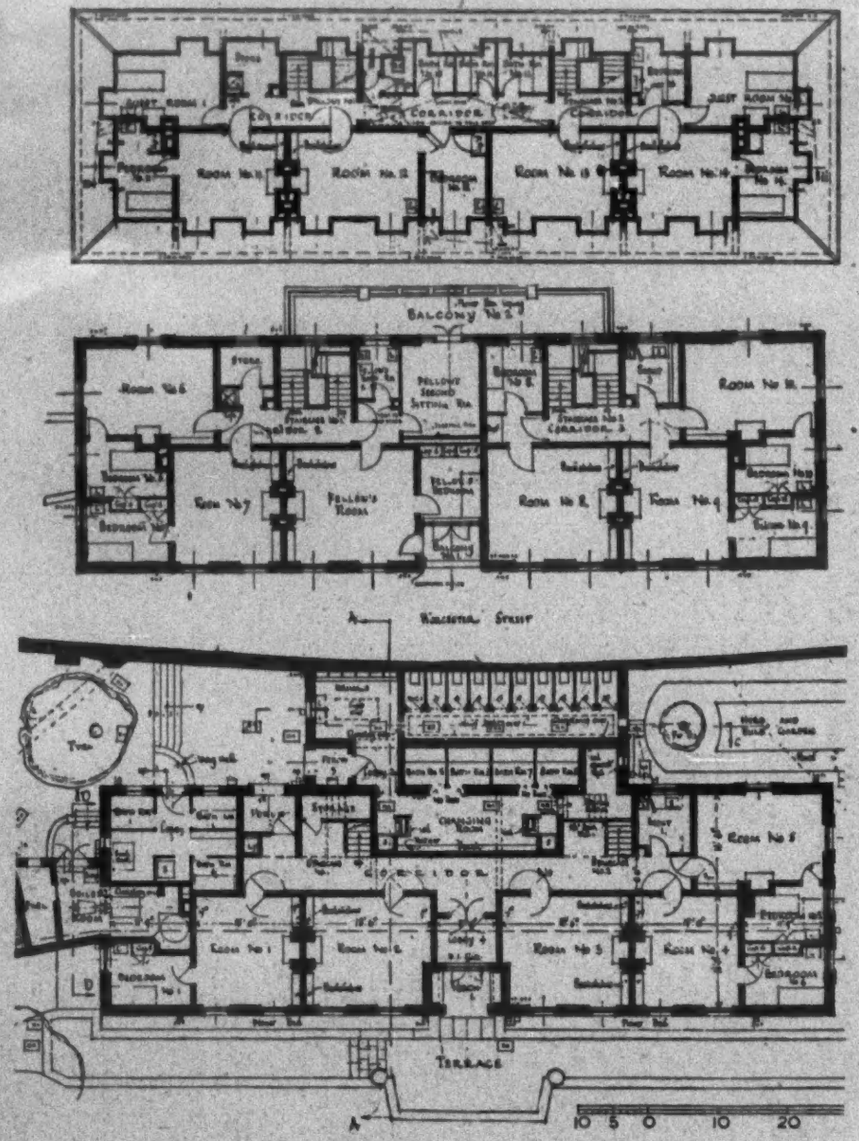


THE PLANS.

WROUGHT-IRON GATE TO ARCHWAY.

ADDITIONS TO WORCESTER COLLEGE, OXFORD.

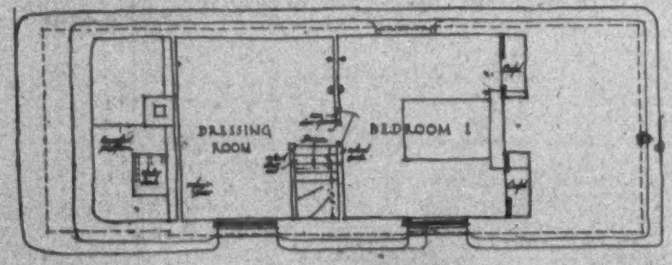
MR. WILLIAM G. NEWTON, M.C., M.A. Oxon., F.R.I.B.A., ARCHITECT.

ALTERATIONS TO A COTTAGE, HAMPSHIRE.

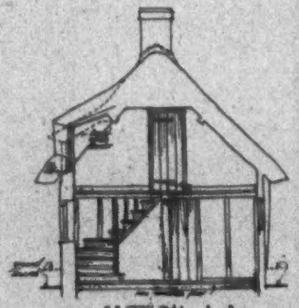
MESSRS. HOWES AND JACKMAN, FF.R.I.B.A., ARCHITECTS.

VIEW FROM THE ROAD.

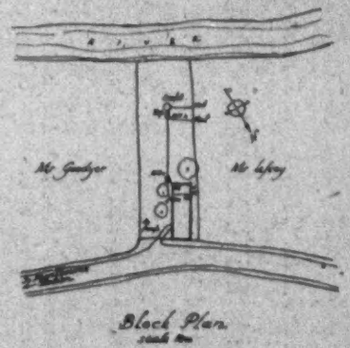
VIEW FROM GARDEN.

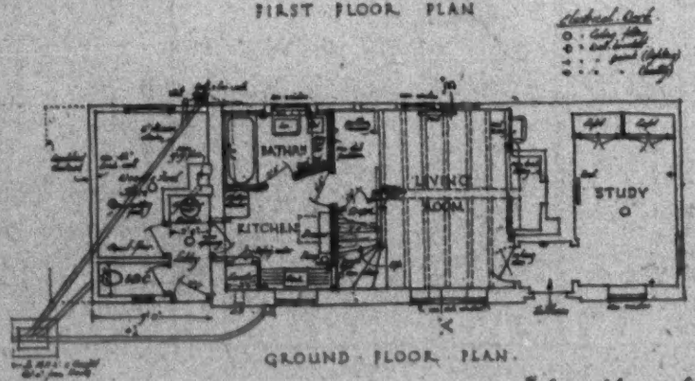


FIRST FLOOR PLAN

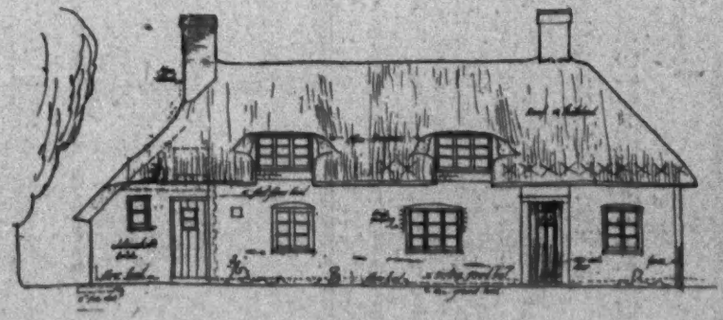


SECTION A-B.





GROUND FLOOR PLAN.

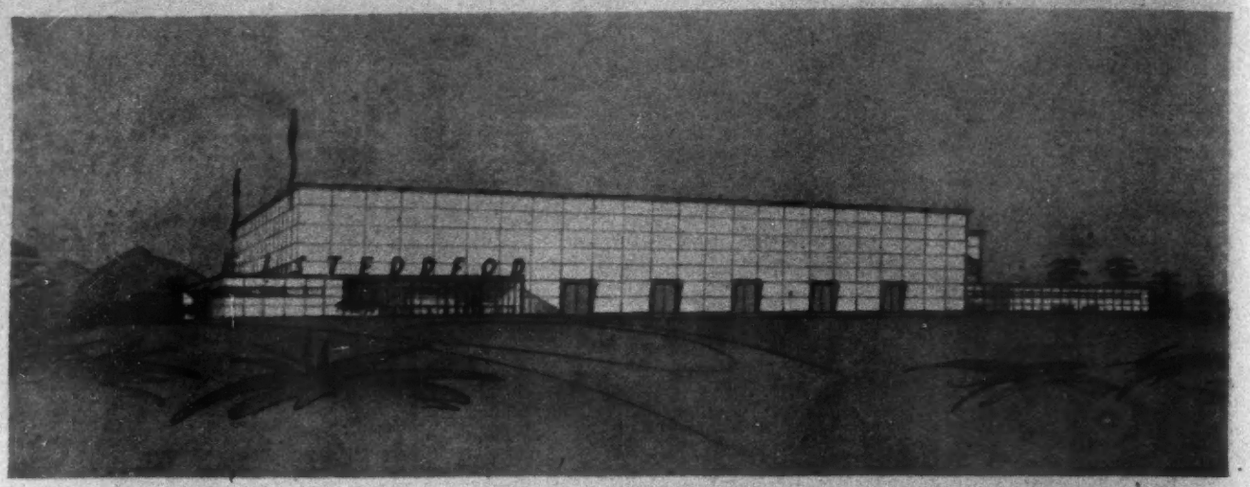


SOUTH-EAST ELEVATION

THIS IS AN OLD COTTAGE AT ST. Mary Bourne, near Andover, Hants, with flint and timber-framed walls and a thatched roof. A new staircase, bathroom and drainage were provided, and the outhouse rebuilt. Windows were enlarged and new ground floors provided at a lower level. The roof was re-thatched.

The work was carried out by Messrs. T. King & Sons, builders, of Abbots Ann, Andover, at a cost of just over £500. Casement windows were by Messrs. C. E. Welstead, of Croydon. The new thatched roof was carried out by a local thatcher, Mr. Rainsford, and cost £26.

Messrs. Howes and Jackman, FF.R.I.B.A., were the architects.

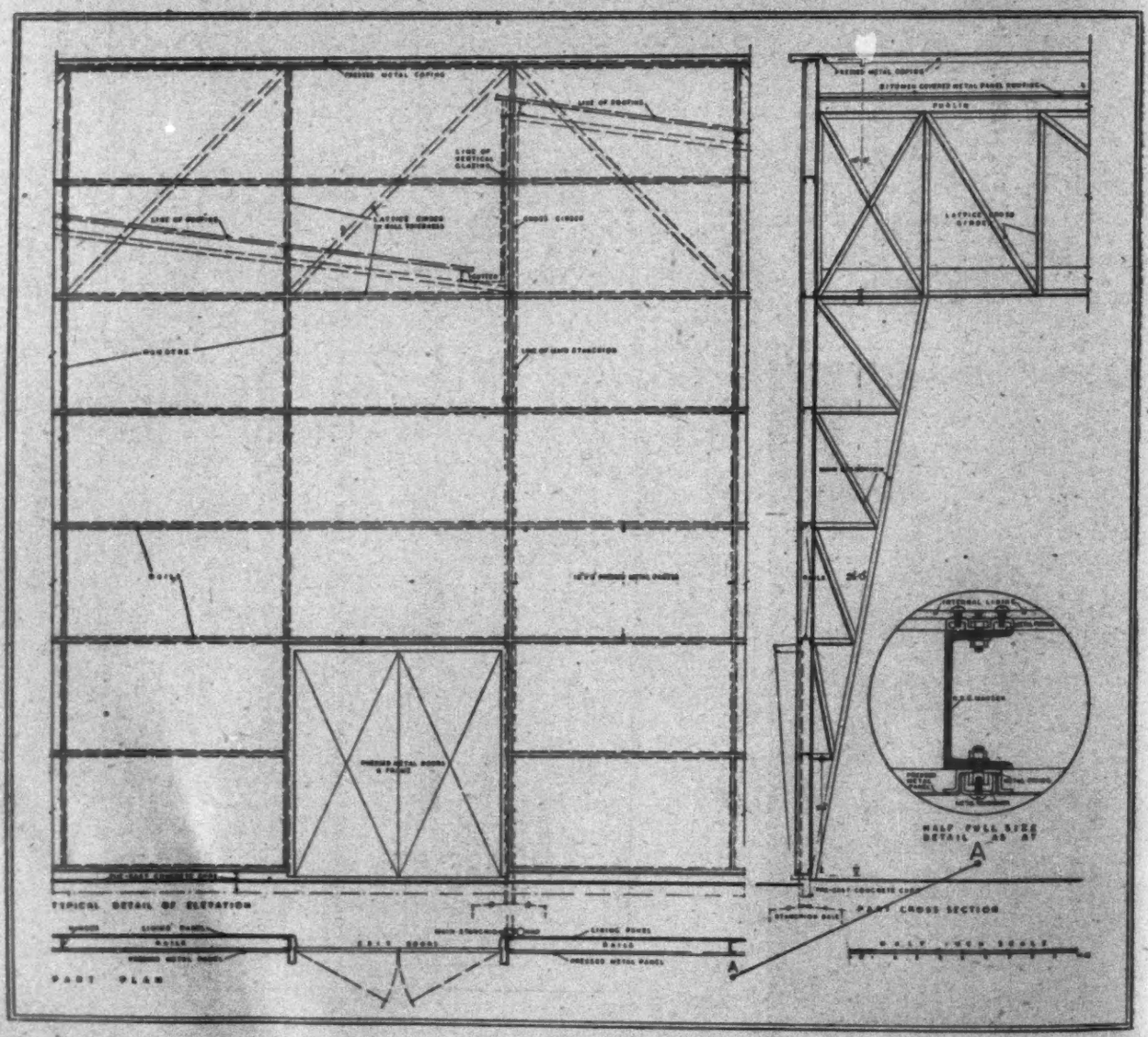


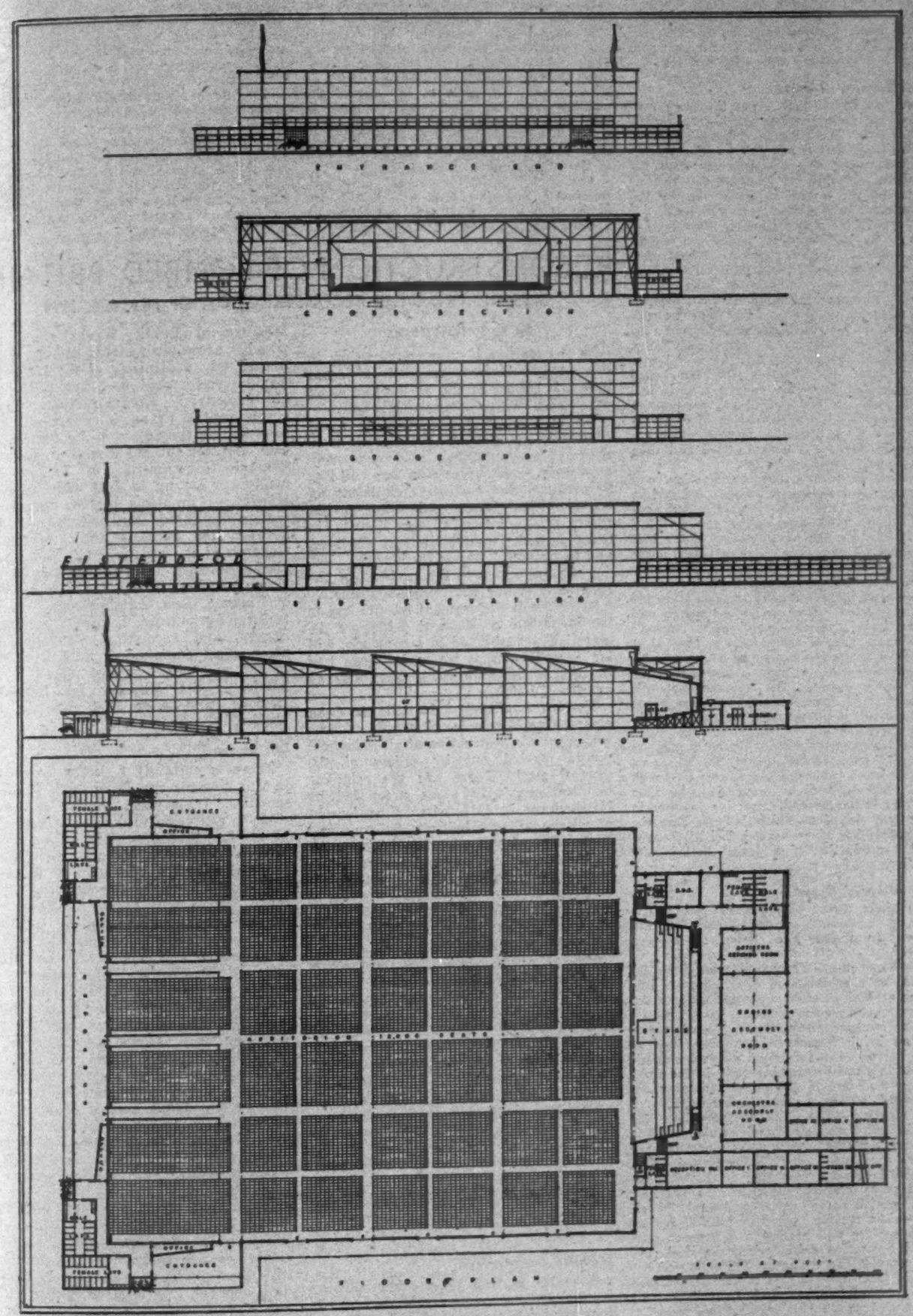
PERSPECTIVE OF SCHEME. *Below*: DETAIL OF CONSTRUCTION.

COMPETITION FOR AN EISTEDDFOD PAVILION: WINNING DESIGN

BY MR. EDWARD BANKS, A.I.A.A., WITH MESSRS. M. MORGAN AND W. P. HAND

THE ROYAL NATIONAL EISTEDDFOD OF WALES—IN CONNECTION with its gathering this year at Colwyn Bay—organised an architectural competition for a pavilion. This was to be a standardised structure, so designed that it might be taken down, transported and re-erected to house the National Eisteddfod which is held annually in different centres of the Principality for one week in the summer. The building is to provide seating for approximately 12,000 in the auditorium and for an orchestra of 100 and a choir of 600. The assessors were Mr. Percy Thomas, P.-P.R.I.B.A., LL.D., and Mr. T. Alwyn Lloyd, F.R.I.B.A., J.P., whose award (in favour of the design submitted by Mr. Edward Banks, A.I.A.A., in





PLAN, ELEVATIONS AND SECTIONS.

COMPETITION FOR AN EISTEDDFOD PAVILION: WINNING DESIGN.

BY MR. EDWARD BANKS, A.I.A.A., WITH MESSRS. M. MORGAN AND W. P. HAND.

collaboration with Mr. Maelgwyn Morgan, B.Sc., A.M.Inst.C.E., and Mr. W. P. Hand, A.M.I.Struct.E.) was given in our issue for August 22. There were 16 designs submitted. Following is their adjudication:

The Assessors' Report.

We feel in no doubt that the work submitted has fully justified the objects of the competition. Much ingenuity has been shown in planning, design and details of construction. In most cases the drawings attain an excellent standard of presentation and of clarity in the several media chosen by the competitors to illustrate their schemes.

It was by no means a simple problem that was set by the conditions issued to competitors, and it is satisfactory to record that those who undertook the task of solving it in a variety of ways indicate evidence of research and capability. Some solutions possessing merit in regard to either plan or construction or general design are, however, too elaborate or costly to be practicable for a building of this description. It would also appear that, in adopting the fan-shaped tapering plan, for which there is a great deal to be said, in the auditorium, competitors have been faced with difficulties of construction for so huge a pavilion as this, which has to be erected for a short period and then transported elsewhere.

Taking all factors into consideration, and although some aspects of its plan and seating arrangements might be improved, we have decided that the design marked "Y Babell," No. 4, on the list we prepared, is the best all-round solution. We therefore award it the first prize of £75. It is simple and straightforward in plan, structural form and elevations—a pavilion that could be readily erected and re-erected. The design is modern and "functional" in the right sense, without striking a note of incongruity. The report which describes the method of construction is a businesslike one, in which the special points are clearly defined. We consider that this solution, with some few modifications, is one that would be practicable for adoption in post-war years.

We award the second prize of £25 to "Louw" [Mr. Idwal Mort], No. 15, as we consider it a commendable scheme, although of a more elaborate and expensive type than No. 4. It has several attractive features in plan and elevation, which indicate that the competitor has given a good deal of thought to the production of a design that is distinctive.

The Winners' Report.

In their report the winners state: The ancient traditions of the Eisteddfod are shown translated into terms of modern society.

Construction.—The pavilion has been designed on a grid unit of 60-ft. squares, this being arrived at after investigations into the economic and structural limits, having regard to its transportability, the main girders and trusses being transported and assembled in two halves. The treatment adopted necessitates six slender stanchions only in the auditorium and two in the proscenium span, so arranged to give minimum interference.

Materials.—The detail provides for welded mild steel structural members, but it is suggested that, with opportunity of supplies, duralumin might be employed. The standard external sheathing is shown to be light-gauge pressed-steel panels in 10 ft. by 6 ft. prefabricated units, protected by an aluminium coating applied by metallic fusion. This surface will present a permanent anodised decorative finish, while the steel core will provide the strength. The fixing of the panels form a vital part in the design, and this is shown in the half-full-size detail and illustrated on the title page of this report.

The internal lining is also provided in standard panels, manufactured from asbestos-twill, giving both a fire-resisting and acoustic-correcting surface. Where, at the stage end, a reflecting surface is required, these panels will be highly compressed, and, where necessary to absorb sound, will be open texture. Glazing throughout is considered to be in unbreakable synthetic glass units. The seating will be of specially designed bench units in pressed metal; the materials throughout will therefore be entirely fire-resisting.

Planning.—The structural unit adopted provides a simple treatment for planning the auditorium seating and for the other accommodation, the requirements being fulfilled in all respects. The seats in the rear of the pavilion have been placed upon a ramp to give improved sight-lines. The entrances to the building are planned to have turnstile gates to give the best and speediest control of the large number of patrons.

Acoustics.—With the lining previously mentioned, acoustic control will be obtained in the auditorium. The stage is designed as a sound-box, the shape of which will throw the sound forward. Care will be taken to insulate this stage from the main structure of the pavilion with cork pads to avoid transmission of structural-borne vibrations.

It is considered that in so large an auditorium the solo voice will need to be intensified by delayed-time amplification placed in suitable parts of the pavilion.

In the course of a letter to us, Mr. Banks writes: "The prefabricated standard panel system for external walls indicated was inspired by the study of American truck-body construction—quite a happy hunting ground for ideas, I suggest, for the prefabricated post-war age to come."

RECONSTRUCTION OF BOMBED BRITAIN

LESSONS FROM THE RECONSTRUCTION OF FRANCE, 1919

By B. S. TOWNROE.

In the approach to reconstruction in this country there is much to be learnt from the history of the reconstruction of devastated France after the last war.

We in this country during the Great War were fortunate, as the damage from Zeppelin and other air raids was comparatively slight. Our post-war building programme was not the rebuilding of ruined cities, towns and villages, but rather the building of new houses in order to make up for the war shortage, and to provide "homes for heroes." Today we have to face the problem of the rebuilding of our bomb-scarred towns.

The French Government in 1919 had to try to restore a chaos of deliberate destruction unparalleled in magnitude, and far exceeding what we so far have had to suffer in this country, in spite of many months of *blitzkrieg*.

There was constant fighting in northern and eastern France for 52 months. There was economic destruction of all industrial plants carried out by orders of the general staff. There was the complete obliteration of the areas evacuated by Hindenburg in 1917, when three-fourths of all the villages between Soissons and Laon were destroyed with high explosives, every fruit tree was sawn down and every agricultural implement broken and burnt. After the war, France had to reconstruct 32,500 miles of roads, 4,000 miles of railway track, 20,000 factories, and 4,000 towns and villages. In one-third of these towns the destruction amounted to 100 per cent. In one-third the destruction exceeded 50 per cent., and in the remaining third the havoc was less. Of 594,000 houses struck by shell-fire in France, 304,000 were utterly destroyed. In 3,256 communes all trace of municipal life had been wiped out. The tragedy of France at the end of the last war was well summed up by Lord Derby in a speech at Liverpool in 1919, when he said:—

> "Suppose England were deprived of Lancashire by an earthquake; then you can understand what the ruins of war and German destruction meant to France."

Muddled Departments.

As early as 1915 the French Government, handicapped by cumbrous and old-fashioned departmental machinery, set to work to try to plan out reconstruction. The Ministry of Public Works, with similar functions to those now possessed by Lord Reith, was put in charge in 1915. The French people were told that the task was so immense that private initiative would be powerless. In two years' time, as the destruction spread and became intensified, it was clear that the Ministry of Public Works could not possibly accomplish such a colossal work. Accordingly a Ministry of the Liberated Regions was formed, and then a Ministry of Industrial Reconstruction. Local government in France is more centralised than in this country, and the Prefects in each Department are directly under the Central Government in Paris. The machinery set up to deal with France's stupendous problems became more and more complicated. Authority was divided between the Prefects and "Secretary-Generals of Reconstruction." There were also established Director-Generals of the Technical Departments: "Departments of Finance, Law, Administration, Architecture, Agriculture, Industry, Statistics, Survey, and Accounts." Confusion became worse confounded, until from 1920 to 1925 reconstruction was placed in the hands of the Ministry for Liberated Regions, and after that date in the hands of the Treasury.

Our Lesson.

There is certainly a lesson which we in this country can learn from France's muddles. It is most unwise and only leads to confusion to divide the responsibility for reconstruction between too many departments. It must be obvious that whoever is Minister of Building here ought to have the main responsibility. This will mean, however, the Service Departments during the war being prepared to co-operate with a Civil Department, and, above all, the Ministries of Health and Agriculture, the Board of Trade, and the Department for Scotland giving up some of their functions in order that there may be one directing force. It will not be any easier in this country, where we cherish jealously our local government traditions, than it was in France after the last war. But we are faced in this country with rebuilding problems far greater than we have ever experienced before, and drastic action will undoubtedly be imperative if waste of money and of effort are to be avoided.

What happened in France? At first the Government did all the work. By direct labour 300,000,000 square yards of earth were moved in order that the land of France might be free from shell-holes and trenches. At least 50 million cubic yards of débris, including thousands of miles of barbed wire, were cleared. It soon became apparent that the cost would mean ruin to France. Building costs in 1920 were five times as much as they were in 1914. This was due to the congestion of communications and the necessity to import into the devastated areas every scrap of building material—bricks, cement, timber and stone. It was necessary to recruit many thousands of build-

ing operatives, to carry them over the shattered roads, to provide them with huts in which to live and with their daily food and warmth. It soon became apparent that, utilising alone the public works organisation of the French Government, the devastated areas could not be rebuilt in less than fifty years. Those responsible advised the Government that they must not expect devastated France to be completely reconstructed before 1970!

Private Builder Used.

Slowly and painfully the moral impressed itself upon those in charge of France. However much they believed in theory in State action it was imperative for them to call upon the private builder. Little by little the value of private enterprise was realised. In the words of M. Tardieu, one of France's plenipotentiaries at the Peace Conference:—

> "Gradually, after a period during which the Government did all the work, an era of private endeavour dawned when contractors worked for the victims of invasion and under their direction, and the Government paid. At first the sole medium of reconstruction, the French Government was henceforth solely to finance it."

First of all, railways and highways were completely restored. Then, thanks to loans amounting to 75 per cent. on the estimated amount of the damage, manufacturers re-established their factories. When France could pay no more her factories were rebuilt to an extent of 65 per cent. Finally, by 1922, 280,000 houses were repaired and 44,000 were rebuilt. This, however, left a shortage of 86 per cent., and even at the beginning of the present war many a French family was still living in a temporary shelter hastily erected in 1919.

France had come to an end of her financial resources. After borrowing right and left, and having spent 63 billion francs, she blamed Germany for defaulting on reparations, and had to shut down on the work of reconstruction. For lack of funds, construction to the value of 15 milliard of francs still remained to be carried out in 1926.

We may well learn from France's experience that, however high may be our ideals of reconstruction, however enthusiastic our hopes, those responsible must never forget that plans can only be translated from paper into reality by the efforts of the building industry itself, and that in the long run these efforts have to be paid for in hard cash.

OBITUARY

Sir Keith Nuttall, Bt.

The death has been announced, at the age of 40, of Sir Keith Nuttall, Bart., chairman of Edmund Nuttall, Sons and Co., Ltd., civil engineers, Trafford Park, Manchester. Educated at Brighton College and Cambridge, Sir Keith followed his father, the first baronet, as head of the firm, which numbers among its works the building of the Mersey Tunnel.

Louis Jukes, L.R.I.B.A., F.S.I.

The death has taken place of Mr. Louis William Jukes, partner in the firm of Lemon and Blizard, of Southampton, consulting engineers. He was a Licentiate R.I.B.A. and an enthusiastic Mason, being P.Prov. G. Supt. of Works for the province of Hampshire and the Isle of Wight.

R.I.B.A. Examinations.

The questions set at the Intermediate, Final and Special Final Examinations held in May and July, 1941, have been published, and are on sale at the Royal Institute, price 1s. 3d., inclusive of postage.

LANDLORD AND TENANT (WAR DAMAGE) (AMENDMENT) ACT, 1941—3

By W. T. CRESWELL, K.C.

Conditional Notice of Retention—(*continued*).

When the tenant has served a notice of disclaimer, provision is made, under Section 6 of the principal Act of 1939, for the determination of disputes about the fitness of premises—that is, whether they are fit for the purpose for which they were actually being used, or had been adapted, immediately before the damage occurred. These provisions are also to apply when a notice of retention is served. Therefore, when a notice of retention or a notice of disclaimer has been served, any person having any interest whatever in the lease, or any interest in the reversion of it, may, within one month of the serving of the notice, apply to the Court to determine whether or no the notice is of any effect; the ground of such an application being that the land which is the subject of the lease had not, at the date of the serving of the notice, been made unfit by enemy action.

When the landlord has served a notice (called "a notice to elect") requiring the tenant to serve either a notice of disclaimer or a notice of retention, the tenant may, alternatively, challenge the landlord by serving on him a counter-notice that the notice to elect is of no effect on this same ground as above. Unless the landlord decides to accept this he must, within 14 days, apply to the Court to determine whether the land is fit or unfit; and if he allows the 14 days to elapse, then the notice to elect becomes automatically of no effect. If he makes this applicaton, and the Court decides that the land was made unfit by war damage, they may extend the period allowed for serving the notice to avoid disclaimer, or the period for compliance with the notice to elect.

If the Court decides that the land was actually fit for its purpose at the date of serving the notice and that consequently the notice, in either case, is of no effect, then the land is deemed thereafter not to have been unfit at that date, and not to have suffered war damage sufficient to make it unfit.

If land to which a conditional notice of retention relates sustains further war damage before it has been rendered fit, the notice is to extend automatically to this damage subsequently sustained. But the notice will not extend to this subsequent damage if, in the meantime, the landlord or the tenant, under Section 12 of the principal Act, has applied to the Court for, and has actually been granted, leave to withdraw the original notice of retention served in respect to the first damage sustained.

Where the tenant has served a notice of retention (or such a notice is deemed to have been served) before the passing of the amending Act—that is, before August 7, 1941—he may, within three months of that date, serve a notice on the landlord that that notice of retention is to be taken as conditional (see Article 2). If within one month from the service of such notice he serves a copy of it on the War Damage Commission, the notice is forthwith deemed to become a conditional notice of retention. Subject to compliance with Section 2 (4) of the amending Act, as detailed in the last paragraph but one of Article 2, all the provisions of the principal Act which relate to the effect of a notice of retention are (pending the determination of the War Damage Commission as to the kind of payment to be made), to apply to a conditional notice of retention in like manner as they apply to an unconditional notice of retention; and if the Commission does not determine to make a value payment they are to continue to apply.

Leases Comprising Separate Hereditaments.

If a conditional notice of retention relates to two or more separate hereditaments, and the War Damage Commission decides to make a value payment in respect to one or more, but not all, of these, the tenant may, within one month of the date of that decision, apply to the Court for an order that the lease is to be treated as two separate leases: (*a*) one comprising the part or parts of the land for which a value payment is to be made; (*b*) the other comprising the remainder of the land; the conditional notice of retention being treated as if it were two notices relating to these two leases each relating to one lease. The Court may give direction as to the apportionment of the rent and as to any sub-lease affected. The determination of the War Damage Commission to make a value payment in respect to the lease (*a*) above is to be treated as final as from the date of the order of the Court. Should a tenant not apply to the Court, or if his application is refused by the Court, he may serve a notice on the landlord that he elects to treat the conditional notice of retention as an unconditional notice of retention.

Further, if the Court does not make any order, and the tenant does not serve an unconditional notice of retention, the determination of the War Damage Commission shall have effect as if it were a determination to make a value payment in respect of all the land comprised in the whole lease, and as if the date on which that determination became final had been postponed for a month. When an application to the Court is made, then the date may be postponed for such longer period as the Court may fix.

(*To be continued.*)

PROTECTIVE WALL DESIGN FOR FACTORIES

(From a Correspondent.)

The 13½-in. brick wall, like its alternative in mass or precast concrete walls and earth barriers, was originally recommended by the authorities as affording a reasonable degree of protection against blast and splinters at distances of 20 ft. and upward from the smaller H.E. bomb. This type of bomb still constitutes an appreciable proportion of the bomb loads of many enemy aircraft, and against these missiles the 13½-in. brick baffle wall has proved itself capable of affording adequate protection where the burst is not too close. But in recent months it would seem that the enemy has tended to use much heavier missiles, which, besides increasing the blast intensity, also penetrate deeper into the ground and set up considerable earth shock waves. These waves cause both a vertical lift and lateral movement in structures, and as a result tend to cause disruptive disintegration of structural materials weak in tension. In order, therefore, to increase protection to valued personnel and machinery the authorities, after a series of investigations, have issued the proposals for the design of much stronger blast walls in reinforced brickwork or reinforced concrete, mainly for this particular purpose. The same investigations suggest that reinforcement introduced into brick or surface concrete shelters under construction would give a much higher degree of protection, so that another set of suggestions for improved shelter design have also been published. To deal with the case of existing non-reinforced shelters, proposals have been made whereby they can be somewhat strengthened by the application of surface reinforcement in various places. It is understood, however, that this expedient, although effective when applied to box-like structures, such as shelters, is not worth-while when applied to free standing structures, such as baffle walls. It is considered that unless such walls are to be used for the protection of vital personnel or machines, it is not in the realm of practicability to demolish all existing 13½-in. brick walls and replace them by a newer pattern. In this connection it should not be forgotten that, provided they are soundly built in cement mortar, 13½-in brick baffle walls have been found to give a reasonable degree of protection to everything but a near miss.

To sum up: It is not practicable to apply strengthening methods to existing 13½-in. brick baffle walls; but where it is considered that the personnel and machinery involved really require a very high degree of protection, the demolition of non-reinforced work must be carried out and its place taken by reinforced structures such as those described in the M.H.S. Circular C.18.

BRICK MANUFACTURE

THE SIMMONDS COMMITTEE.

THE Minister of Works, with the agreement of the industry, has appointed a committee, under the chairmanship of Mr. Oliver Simmonds, M.P., to advise him on the steps to be taken for increased efficiency and economy in the manufacture of bricks. Following is the composition of the Committee:—

Oliver Simmonds, M.P., Chairman.

National Federation of Clay Industries.—Horace Boot, M.Inst.C.E. (Eastwoods, Ltd.); E. ffinch Mitchell (Sussex and Dorking United Brick Companies, Ltd.); E. Gwynne Vevers, C.E. (Cattybrook Brick Co., Ltd.); J. H. B. Dixon (Hough & Co., Ltd.); and H. Halliday, F.C.I.S. (Nat. Fed. of Clay Industries).

Pressed Brickmakers' Association.—Colonel C. W. D. Rowe (London Brick Co., Ltd.); and F. H. Parrott, F.C.A. (Pressed Brick Makers' Assn., Ltd.).

Sandlime Brick Manufacturers' Association.—R. S. Barringer (Mansfield Standard Sand Co., Ltd.).

Non-Associated Firms.—C. Trollope (Gatwick Brickworks); and Major G. H. Alletson (Castle Fire Brick Co., Ltd.).

Scottish Employers' Council for the Clay Industries.—Thomas R. C. Hurll, B.Sc. (P. & M. Hurll, Ltd.).

Scottish Coalmine Brick Manufacturers.—Gilbert Morrison (Niddrie and Benhar Coal Co., Ltd.).

Colliery Brickworks.—F. N. Ross (Hartley Main Collieries, Ltd.).

A. T. Green, F.I.C. (British Refractories Research Association); Dr. F. M. Lea, D.Sc., F.I.C. (Building Research Station); Dr. J. G. King (Fuel Research Station); L. H. Pearmaine (Transport and General Workers' Union); and H. L. Bullock (Nat. Union of General and Municipal Workers).

The Secretary is Mr. A. Miller, B.Sc., A.R.I.B.A.

The Committee is representative of all interests concerned, and its terms of reference are, in particular, to advise on steps to be taken to secure adequate output, maximum co-ordination, pooling of resources and information, economy of manufacture, introduction of more scientific methods, and on labour and transport problems.

On the formation of the Ministry of Works a Directorate of Bricks was set up in October, 1940, to deal with questions of manufacture, supply and demand of all classes of bricks, excepting glazed and enamelled, and with wages questions in England, Scotland and Wales. A register of manufacturers was prepared which is the most comprehensive yet compiled. As a result, the Directorate can estimate brick production accurately. Inquiries sent to 910 manufacturers showed 907 working 1,184 yards at the outbreak of war, and 634 working 825 yards at July 31 last. Four hundred and twenty were members of associations or brick sections of local chambers of commerce and 214 were non-federated. The estimated output for 1941, based on production in the first five months, is 4,500 million bricks.

The Simmonds Committee will consider the substantial variation in production capacity per man, in methods of manufacture and drying, types of kiln, standards of equipment and organisation of yards; difficulties in supply of labour and fuel; and which firms or yards should be scheduled under the Emergency Work Order. Practice in many parts of the country, it is stated, is based on local and family traditions, and the industry, with notable exceptions, has not taken sufficient advantage of modern scientific knowledge and research facilities, and it is felt that fuller research would facilitate accurate selection of the most suitable type of brick for each purpose. This would tend to limit commercial competition to comparable products and to stimulate technical competition.

The Committee will also consider problems arising from prospective withdrawals of men for the fighting services and their bearing on urgent war-time problems of efficiency and output.

BOOK REVIEW

The Liabilities (War-Time Adjustment) Act, 1941. Annotated by G. GRANVILLE SLADE, B.A., LL.M.(Lond.), of Gray's Inn, Barrister-at-Law. (London: Butterworth and Co. (Publishers), Ltd.) Price 7s. 6d.

To meet new conditions resulting from the war much Statute Law has been made protecting the individual who has suffered loss or inconvenience. Among other Acts are the Courts (Emergency Powers) Act, 1939; the Rent and Mortgage Interest Restriction Act, 1939; and the Defence (Evacuation Areas) Regulations, 1940. Now in the Liabilities (War-Time Adjustment) Act, 1941, we have an Act designed specially to protect, and make provision for adjusting the affairs of, those persons who, as a direct result of the war, are in financial difficulties. This is a new type of legislation.

Under the Act, "liabilities adjustment officers" are to be appointed, whose main function is to give advice to debtors and assist them to arrive at an equitable and reasonable "scheme of arrangement" with their creditors. The debtor is to be given an opportunity of bridging over what might otherwise prove insurmountable financial difficulties leading possibly to bankruptcy and its usual consequences—in these cases unmerited.

A scheme of arrangement may be made without the parties taking their affairs before the Courts. But if they cannot do this, liabilities adjustment proceedings may be taken in the Courts in order to obtain adjustment and settlement under this Act. An application to the Courts can be made by any of the following: The debtor, a partner or partners of a firm involved, a creditor who is prevented from exercising these remedies by the Defence (Evacuation Areas) Regulations, 1940, a creditor when a debtor has been granted relief under the Courts (Emergency Powers) Act, 1939.

Section 26 of the Act is of special interest to those who have entered into contracts since the outbreak of war. The Courts (Emergency Powers) Act, 1939, is specially to extend to such contracts.

The Act, with much other useful information, is the material of the excellent book under review. The volume is actually a reprint from Butterworth's Emergency Legislative Service (Annotated), Statutes Supplement No. 9; and the annotations by the author have been well considered, and give a ready guide to the various sections of this important Act.

Included in the book are the Liabilities (War-Time Adjustment) Rules, 1941. These rules lay down the general procedure under the Act.

The Forms given in the Appendix will be employed by all those requiring to proceed under the Act.

The index is extremely well compiled.

The expedition with which this book has been published so soon after the passing of the Act shows great energy on the part of the author and the publishers.

EMERGENCY INQUIRY BUREAU

Questions from readers arising out of War-time difficulties and recent Emergency legislation will be answered by a special staff of contributors. Questions, which should be addressed to the Editor, should be accompanied by a stamped addressed envelope.

Temporary Shops and By-laws.

SIR,—*The owner of two shops in this area which were "blitzed" and practically destroyed obtained a licence from the Ministry of Works and Buildings, as the cost was about £140, to erect two shops of a temporary nature. The builder did not send in a plan for approval to the Council and shops have been set out to the original line. Can the Council enforce the owner to send in a plan and issue a temporary licence for the duration of the war only, seeing that the structures do not comply with by-law regulations, if approved?*

A town-planning scheme has been prepared, but not yet sent to the Ministry of Health, and now the street (a County Council main road) is down for widening and improvement, as bombing demolished so many shops and houses that, in our reconstruction scheme under town planning, the street will be widened from 24 to 50 ft.

The first report of the Uthwatt Committee stated that there was nothing to prevent an owner from erecting a building, an obstacle to reconstruction, if he liked to take the risk of its being pulled down later without compensation. RIVERS.

A correspondent writes: The fact that the Ministry of Works and Buildings granted a licence for the erection of two shops of a temporary nature does not free the owner from compliance with the by-laws (as to approval of plans, etc.), and with the Public Health Act, 1936 (as to temporary buildings). The authority concerned should therefore enforce both of them, and, if found possible, issue the temporary licence referred to. It does not seem that the town-planning scheme has progressed sufficiently for the local authority to take any action thereunder. There is no interim development order in force, for instance. The fact that the widening of the street is contemplated cannot affect the owner of the temporary shops at present, for no notice under any Act to widen has been served on the owners along the street in question. What the owner has done has been done at his own risk; and if a temporary licence is given, as suggested, for the duration of the war only, which should be done, then, in view of all the circumstances, and as described in the query under answer, it is manifest that the owner concerned cannot be entitled to, or succeed in obtaining, compensation when he has to pull the shops down at the end of the period of the licence, or when the town-planning scheme becomes effective.

Controlled Building Materials.

SIR,—*Can you give a comprehensive, up-to-date schedule of controlled building materials and a corollary schedule of uncontrolled materials or substitutes?*

REGISTERED ARCHITECT.

The Ministry of Works and Buildings, to whom this inquiry was submitted, write as follows: "So far as this Ministry is aware the following are controlled materials: timber, steel, asbestos-cement, plaster board, roofing felt, roofing slates, wallboard and insulating board, woodwool slabs, Ciment Fondu and "Lightning" brand aluminous cement and cast iron. For these materials it is necessary to have a licence or authorisation by way of letter from the employing authority or the Emergency Works Officer.

"There may be other controlled materials, and all sorts of goods are controlled by the Ministry of Supply, of which only a fraction is used in building and for which that Ministry demands permits.

"It is not possible to give a list of materials which are not controlled."

BUILDERS' CRAFTSMEN

By A. E. CLARKE

EDITOR'S NOTE.—The problem of giving technical education in war time to those young men in or outside the Services who are going to play a leading part in post-war physical reconstruction is much in the minds of all who know how greatly the healthy condition of the building trade depends on a proper supply of craftsmen. The article which follows was written before the outbreak of war, but if it succeeds in giving some inspiration to those young men whose minds in their leisure moments are directed towards fitting themselves for the arts of peace, then it will have served its purpose.

EVERY apprentice to a craft will remember his first day of toil, and, more especially, that hour when he first wrought with tools and found that they were obedient to his wishes. The finely wiped lead joint, the skilfully bossed angle of plumbers' work, the neat and almost imperceptible joint of the joiner, the wonderful ties and scarfings of the carpenter, the close and evenbatted surfaces of the masons' dressings to stone, the finely cut arches of the bricklayers' work, and the enrichments of the carver are a few of the "jewels" to be looked for in most of our buildings. All these speak to the craftsman in eloquent language. They are the vehicles whereby, in memory, he is taken back again to his early days.

The craftsman is, in reality, always an apprentice. That period is never completed. In our modern building, new ideas, new methods and new materials are for ever arising, and as each appears it is mastered by the patience and ability acquired in the early days of apprenticeship. The boy craftsman usually begins work at the age of 14 or 15 years. During the first few months he is at the beck and call of the whole shop, and, in that period, learns the names of tools and observes their several uses. But the period of initiation to their use is slow and painful. He is slow, awkward and clumsy; and cuts and bruises are his early rewards. It is by these little misfortunes that his skill is slowly and painfully gathered.

Our young craftsman of to-day differs in many respects from him of yesterday, inasmuch as, during his apprenticeship, he has to attend technical classes, and these at a time when he knows very little of his practical work. At the evening classes he studies several subjects relating to his trade, but the exertion of eight hours of bodily toil somewhat tends to abate the enthusiasm he would otherwise show for assimilating technical theory. But in spite of this there are many things which he will do in the classroom which will be of valuable assistance to him. He will readily perceive that he has been actually working out many problems in a practical way. Divisions of lines and angles, intersections of planes and surfaces, and interpenetration of solids—all these he has actually performed in the workshop, and when he opens his text book he will find many of his old friends awaiting him apparelled in geometrical garb.

Knowledge of Materials.

The apprentice should have some knowledge of materials before he enters into the drawing office of the technical school, knowledge gained by first-hand information of the materials themselves. This enables him readily to perceive their possibilities. Thus he will have noticed the different kinds of wood and their characteristics; stones, their beds and weathering qualities; bricks, their variation of colour, burning and texture, and the manner in which these materials respond to chisel, hammer and trowel.

With the older craftsman his apprenticeship was rigorously enforced after his indentures were signed. The bench or banker was his drawing board, and his technical instructor the older craftsman, from whom he received personal tuition. It was this personal touch which was the means of imparting to him at a very early stage the secrets of the trade. That subtlety of touch, that dexterous handling of the tool, that rhythm of movement between brain, hand and tool, which so stamp the older craftsman, were all acquired by him in his early days. One observes with wonder the alacrity with which a craftsman selects his various tools and deftly negotiates his difficult cuts and administers his safe and accurate blows whatever be the materials he is working upon.

In those early times before the machine shop had become established, the craftsman wrought his materials by the use of handsaw, plane, chisel, and hammer, and such operatives as carpenter, joiner, mason and blacksmith acquired a skill such as our apprentices of to-day have little chance of acquiring. It was this squaring of the materials which was responsible for the great accuracy of their handiwork. It was the "ashlar work" of good building, for the enrichment and projections are always offsets to such "ashlar work." It had, in fact, a dual significance. It acted as a datum and a wall line to the building craftsman, and, as a datum is to the draughtsman, it was the measuring line of the operative.

"Working from the Rough."

Again, with the older school of craftsmanship, the working from the rough instead of from the machined article involved a greater conception of space, and, arising from this, various geometric lines of thought were developed. The rough block of stone to be squared with true rectangular faces must have all its indentations removed. The lines to be inscribed upon it must be the true boundaries of a plane. The same operation is to be observed when the carpenter squares up his log or scantling or when the carver or sculptor "knocks off his rough" to get down to his point lying in the plane. It is by such simple methods that we can observe the whole development of the craftsman's geometric skill.

The verticality of work was, in the past, due to the use of that old English tool the plummet or plumb-rule. In recent years the use of this instrument has fallen into disuse and the level is fast displacing it, but it is still to be observed that the older craftsmen amongst the carpenters, masons, and bricklayers still use the ancient plumb-rule. It is far more accurate to work with although somewhat cumbersome for carrying about from job to job. There is a delightful style in the way these artisans use it. Their foot and hand invariably come into play. The toe of the boot has the knack of making very fine adjustment while the left hand adjusts the rule to suit the hanging plumb-line. No vernier of an instrument can make more subtle adjustments than the bricklayer or mason can with the plumb-rule.

The string line of the bricklayer is also interesting to note, stretching from corner to corner. The dexterity with which he tosses on his mortar and beds each brick without once dirtying or displacing the line is worthy of note, and many days of patient toil are required before this can be done perfectly, and perfectly it must be done if the facade of the building is to be in a true vertical plane.

Again, one cannot help admiring the ease with which he manipulates his bricks. How quickly he turns them about in his left hand, now frog up, then frog down, then end for end, while his right hand spreads the mortar to receive them. There is no hesitation in his selection, and there is a rhythm of music and movement from his ringing trowel for those who can appreciate and observe.

With the mason and carver what wonders can be achieved with the repeated blows of hammer and mallet and the skill with which they handle the chisel. To every blow of their hammer the chisel is subtly adjusted by an almost imperceptible movement of the hand, yet the movement is there, directing, twisting, and cutting at every blow. Closely observe the face of their work; not a bruise or indentation will be found.

Watch the plumber wiping his lead joint or beating up an angle of lead. Rarely does the molten metal touch his hand or his mallet pierce his sheet lead. Observe the skill with which he bends a lead pipe with the use of his various sized bobbins. As the word bobbin signifies—knocks, bobs—so with the repeated bobs, pulling the threaded bobbins through the lead pipe, he accomplishes his bend, the lead never being reduced in thickness or bruised or torn. Truly a piece of good honest craftsmanship is the bending of a lead pipe.

Some Historical Craftsmen.

There is very little written history of the individual lives of builders' craftsmen. A few are briefly mentioned in connection with the great age of cathedral building. Amongst these the following are some of the most distinguished: William Torrell, Robert of Beverley, Alexander the Carpenter, John of St. Albans, Alexander of Abingdon, Edward of Westminster, Walter-de-Bole, Henry Yevele and William of Colchester. Yet even their names are almost unknown amongst present-day craftsmen. We do, however, find evidence of the manner in which they wrought their work, for in the dilapidations of old ruins and in the restorations of mediæval ecclesiastical architecture many traces of their method of work are to be found. Amongst the old masonry one often comes across the individual mason's mark. These are not, as many people imagine them to be, freemasons' marks, but are the banker signs which each had to cut on the top surface of the particular piece of stone which he worked. The master mason kept a record of these marks, and by this means he was able to trace the work of any individual mason. This old method has not entirely died out, for even to-day many of the operative masons still adhere to their marks. It is interesting to note that these marks are composed of straight intersecting lines, triangles and squares. The reason why they were not circular was due to the fact that the gouge chisel was rarely used by a mason.

Practical Geometry.

There is much evidence to prove that these old masons were skilled in practical geometry, for one finds on Early English work which has been demolished the actual setting out of curves forming the moulding of shaft-stones and jambs and, on the flat surfaces of the abacus of capitals, one often finds the mouldings, not scribed on by the use of a zinc template as it would be to-day, but with the geometrical working set out and auxiliary lines, used for dividing arcs and angles, clearly scribed in. These compass lines have been preserved by the bedded mortar.

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Their tools varied very little from those used by operatives to-day. The mark of adze, chisel, hammer and plane which characterised their ancient work clearly shows this. By a visit to the Elgin Gallery of the British Museum one can inspect the mallets and chisels used by the old Greek craftsmen; they might easily be taken for the tools of some West Country mason.

One can glean from the records of our old abbeys and cathedrals a fund of interesting information relating to the mediæval craftsmen. We learn that boots, dress, gloves and food were found in addition to wages paid, and quoting from the records of Westminster Abbey we find the following :—

"Account of the new work of the old church of Westminster, Edward III, 1342.

"Four stones bought for making capitals, 2s.

"Wages for mason for repairing bay of window for one week, 2s. 6d.

"Hire of a mason for 1½d. a day for placing the said capitals.

"For repairing columns, 7½d.

"Wages of two masons clearing drains and making and placing corbels, 21 days, 10s. 6d.

"Paid to Walter le Bole, mason, for the repair and making of four windows and one great pillar by special agreement, 26s.

"His wages for making parapet, 60s. Dress, boots, gloves and food found."

Again from the same records :—

"Wages of two masons from the Feast of St. Michael to February 23rd (21 weeks), 70s.

"To one of them as master of the work, 26s. 8d. over his wages, and for his dress, 13s. 4d., for two pairs of shoes 3s., and to their boy, 12d.

"Wages of Adam de Wytteneze, a bedder of stone, for 34 weeks from the Feast of Purification, 66s. 8d., his labourer, 48s."

The following is another item of interest :—

"63 cartloads of stone from the quarry to Battersea, £4 14s. 6d.

"Carriage of same from Battersea to Westminster by water, 7s. 10½d.

"Carriage of same from the water to the church, nothing, because in the sacrist's cart, but in expenses of those helping to load the cart, 2s.

"Expenses at quarry, garden at Battersea hired for putting the stone in, 66s. 8d. : 440 loads of stone from the quarry to Battersea, £44."

From these entries of the fabric rolls of Westminster we can suppose that the stonework of part of the Abbey was worked at Battersea in the thirteenth century, and to-day Battersea is the home of London's masonry trade, probably a wonderful continuity of masonry work for 600 years.

Not only was the dress and food for the chief craftsmen supplied, but lodgings were also found for the operatives, for another entry reads : "Wages to one chief, ten regular and six casual masons, the table expenses of one mason apprentice (1s. a week), two casual setters, two carpenters working upon the new house for the masons and another house in Tothill Street for 22 weeks at 2s. 6d. each, etc."

There is a wealth of useful information for the building craftsman to acquire apart from his craft whilst he plies his chisel, hammer and trowel, and often through stumbling upon fossils, peculiar jointings both in old stone and woodwork, curios in demolitions, peculiar practical names of tools and materials and in the sayings of craftsmen—all these will be avenues leading him ultimately into the regions of geology, architecture, archæology and history. There is inexhaustible wealth of knowledge always waiting for the craftsman who has eyes to see and ears to hear.

College of Technology, Manchester.

A prospectus of the University courses in the College of Technology, Manchester, for the session 1941-42, has reached us, together with particulars of the part-time courses. Subjects embraced in the work of the Faculty include mechanical engineering, electrical engineering, municipal engineering, applied chemistry, and building. The new session will open on Thursday, September 25, and students will be enrolled on Monday to Wednesday, September 22 to 24.

LAW REPORT

ACTION BY OWNERS OF LONDON BLOCK OF FLATS TO RESTRAIN NUISANCE BY NOISE.

VACATION COURT.

Before MR. JUSTICE OLIVER.

Greig v. Surridge, Dawson & Co., Ltd.

In this case the plaintiffs, Miss M. J. Greig and Mr. C. Greig, the owners of a block of flats known as Lancaster-court, Newman-street, London, W., applied for an interlocutory injunction restraining until the trial or further order the defendants, Messrs. Surridge, Dawson & Co., Ltd., of Newman-street, newspaper and periodical distributors, their servants or agents, from shouting and loading or unloading vans or lorries at their premises between 11 p.m. and 7 a.m. so as to cause a nuisance by noise to the plaintiffs or their tenants, the occupiers of flats in Lancaster-court.

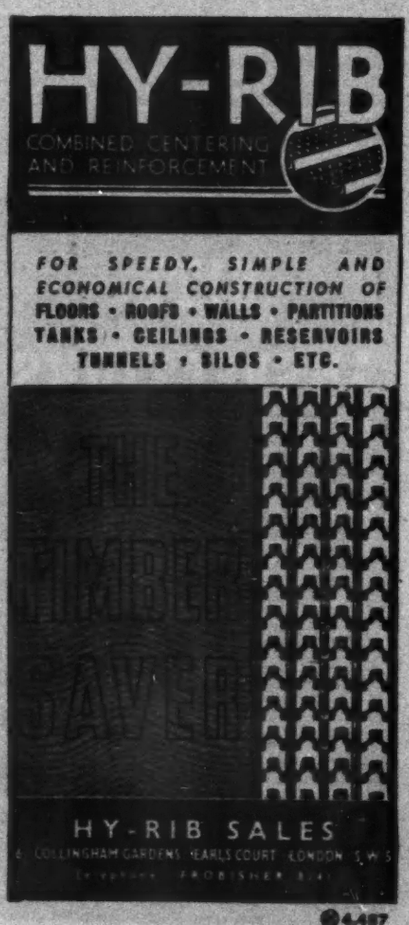
It was stated in support of the application that the noise complained of occurred on July 27 last and on subsequent nights when the defendants took possession of their premises in Newman-street, and that, although an air raid was in progress during part of the time, the noise complained of could be heard above the gunfire and prevented the occupants of the flats from sleeping.

On behalf of the defendants it was admitted that on the night they moved into the premises there had been some noise, but since then every precaution had been taken to minimise it. In these circumstances it was contended that no case had been made out for the granting of an injunction.

His lordship, however, decided otherwise and granted the injunction as asked.

Purchase Tax.

The Commissioners of Customs and Excise have issued Notice No. 78, September, 1941, which supersedes No. 78 of March last and gives latest information relating to the liability of particular classes of goods to purchase tax.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NEW COMPANIES

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery-lane, W.C.2, from the documents available at the Companies Registry.

G. AND L. WORBOYS, LTD. (369,143). Regd. September 4. 4, London-road, Wembley. Builders, etc. Nominal capital, £500. G. A. Worboys, 69, Sudbury-avenue, Wembley (permanent managing director).

SUBURBAN REPAIRS, LTD. (369,125). Regd. September 3. 4, Broad-street-place, E.C.4. Builders, etc. Nominal capital, £100. Dir. : E. L. Oliver, 109, Honor Oak-park, S.E.23.

HALIFAX BUILDERS (EMERGENCY WORKS), LTD. (369,002). Regd. August 29. Nom. cap., £9,500. Subs., W. Frith, 8, Laurel Bank, Hyde Park, Halifax; E. & T. Bowen, Ltd., Halifax; and Pickles Bros. (Builders), Ltd., Halifax.

PLANT SUPPLIES, LTD. (369,044). Regd. August 30. Bank Chambers, 167, High-street, Bromley, Kent. Manufacturers of and dealers in builders' and decorators' requisites, etc. Nom. cap., £1,000. Dirs., F. G. Love, Rookery-drive, Old Hill, Chislehurst, Kent; and E. E. Lemar.

PLYMOUTH AMALGAMATED CONTRACTORS, LTD. (369,045. Regd. August 30. Builders, contractors, etc. Nom. cap., £5,000. Dir., H. E. Bartlett, "Fourwinds," Complin Park Villas-road, Plymouth.

SPRAYCRAFT CO., LTD. (369,049). Regd. August 30. 167, High-street, Bromley, Kent. Builders, decorators, painters, etc. Nom. cap., £1,000. Dirs., F. G. Love, Rookery-drive, Old Hill, Chislehurst, Kent, and J. Fairhurst.

HADLEY MOLD CONSTRUCTION CO., LTD. (369,057). Regd. August 30. Commonwealth House, High Holborn, W.C.1. Builders, contractors, engineers, etc. Nom. cap., £100. Dirs., H. C. Mold, Arden Grange, Parkhill-road, Croydon, and W. T. Watson.

OLDHAM CLARION LAND AND BUILDERS' SOCIETY, LTD. (369,073). Regd. September 1. Originally registered under the Industrial and Provident Societies Act. Nominal capital, £500. Dirs. : E. Field, 2b, Edward-street, Oldham; J. Critchley, and seven others.

A. ARNOLD, LTD. (368,954). Regd. August 27. To carry on the business of builders, contractors, etc. Nominal capital, £1,000 in £1 shares. Dir. : A. L. Klausner, 25, Haymarket, S.W.1. Sub. : C. A. Norris, 46, Parham-drive, Ilford, Essex.

BOWLES PROPERTIES, LTD. (369,061). Regd. September 1. Harrowby-street, The Docks, Cardiff. To acquire lands and carry on business of wharfingers, warehousemen, builders' merchants, dredger and sand-sucker owners, etc. Nominal capital, £2,500. Permanent dirs. : J. Bowles, "Holmehurst," Dinas Powis, Glam.; and G. R. Bowles.

DESBOROUGH CONSTRUCTION CO., LTD. (369,066). Regd. September 1. Builders, contractors, etc. Nominal capital, £100. Dir. : R. G. Cooke, Fern Bank, Mottram-road, Stalybridge.

JOHN BROWN AND SON (BOLTON), LTD. (369,072). Regd. September 1. Builders, contractors, etc. Nominal capital, £2,000. Dirs. : J. Brown, 90, Green-lane, Bolton; and V. Brown.

BOLASS, LTD. (369,083). Regd. September 2. 22, Paradise-street, West Bromwich, Staffs. Builders, contractors, etc. Nominal capital, £100. Dirs. : A. W. Butler, 69, Johnson-road, Erdington, Birmingham; and Iris E. Lissimore.

E. H. SMITH (COVENTRY), LTD. (369,159). Regd. September 4. Builders, contractors, builders' merchants, etc. Nominal capital, £5,000. Sub. : E. H. Smith, Grimshaw Hill, Henley-in-Arden, Warwick.

A. K. SINGER, LTD. (369,157). Regd. September 4. 48, High-street, Skegness, Lincs. Plumbers, glaziers, etc. Nominal capital, £1,000. Dirs. : A. K. Singer and Mrs. E. M. I. Singer, 334, Drummond-road, Skegness.

A. TURNER AND SON (MIDLAND BUILDERS' MERCHANTS), LTD. (369,208). Regd. September 6. Sceptre House, 169-173, Regent-street, W.1. Nominal capital, £1,000. Dirs. : R. Gray, Shrewsbury House, Cheyne-walk, S.W.; and R. R. J. Turner.

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. The dates at the head of paragraphs are those for the submission of tenders: a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING.

SEPTEMBER 23.

York T.C.—Reinforced brick communal surface shelters. C. J. Minter, City Eng.

SEPTEMBER 24.

Holderness R.D.C.—11 shelters. J. A. Andrews, Sur. Council Offices, Skirlaugh, Hull.

†**Penge U.D.C.** — Strengthening surface brick shelters. Sur. Dep. £3 3s.

Woking U.D.C.—Construction of 16 surface shelters. G. F. Hawkins, Eng. and Sur. Dep. £2 2s.

SEPTEMBER 26.

Chertsey U.D.C.—Permanent repairs to 62 houses. W. V. Davies, Eng. and Sur.

Kirkcaldy T.C.—Defence works. Burgh Eng. Office, East Fergus-pl.

Stourbridge T.C.—Adaptation of existing premises as borough restaurant. G. N. Maynard, Boro Eng. and Sur.

SEPTEMBER 27.

Bridlington T.C.—Ten shelters on various sites. Boro' Eng.

SEPTEMBER 29.

Larne T.C.—Combined first-aid post and gas cleansing station. Town Surveyor's Office, Victoria-st., Larne.

SEPTEMBER 30.

Bangor, Co. Down, T.C.—Combined cleansing station and first-aid post. Boro' Sur.

Chislehurst and Sidcup U.D.C.—Strengthening of 23 surface shelters. Eng. and Sur. Dep. £1 1s.

OCTOBER 3.

***Stourbridge T.C.**—Adaptation of premises as two Borough restaurants. G. N. Maynard, A.M.Inst.C.E., Boro' Eng. and Sur.

OCTOBER 4.

Windsor R.D.C.—Erection of garage accommodation. Building Inspector, Council Offices, Bowden-rd., Sunninghill.

PAINTING, ELECTRIC LIGHTING, HEATING, &c.

SEPTEMBER 23.

Horsham R.D.C.—External painting of cottages, Crawley. V. Bartrim, Building Sur.

SEPTEMBER 24.

Sunderland T.C.—Reconstruction of central heating service, municipal hospital. Boro' Eng. Dep. £2 2s.

SEPTEMBER 26.

Rochdale T.C.—Painting work at Falinge Park, Broadfield Park and Castleton Recreation Ground. Boro' Sur.

OCTOBER 1.

Caernarvon T.C.—Painting 132 houses on various sites. H. Evans, Boro. Sur.

OCTOBER 4.

Tiverton T.C.—Exterior painting and interior decorations at The Lodge, People's Park. Boro' Sur.

ENGINEERING, IRON AND STEEL.

SEPTEMBER 22.

Holland (Lincs) C.C.—Demolition of brick bridge and construction in ferro-concrete of new bridge. Wm. A. Rogerson, M.Inst.C.E., County Sur., County Hall, Boston, Lincs. Dep. £3 3s.

ROAD, SEWERAGE AND WATER WORKS.

SEPTEMBER 22.

Chepping Wycombe T.C.—Construction of covered reinforced concrete contact tank together with treatment house, ventilating houses, etc. Boro. Water Eng., 70-71, Easton-st., High Wycombe. Dep. £2 2s.

SEPTEMBER 26.

Bromley T.C.—Construction of twelve concrete tanks and of three ponds. Boro' Eng. Dep. £1 1s.

SEPTEMBER 27.

Ealing T.C.—Laying out and draining of Northolt Cemetery (1st portion). C. W. Seddon, M.Inst.C.E., Boro' Eng. Dep. £1.

Ely R.D.C.—Laying ¼-in. lead water services to 108 houses. Sur., 11, Lynn-rd.

OCTOBER 7.

Highworth R.D.C.—Construction of approx. 220 yards of cast-iron pipe and concrete pipe sewer, 21in. in diameter, manholes, storm overflow chamber, screening chamber, sludge lagoons and incidental works. W. P. Kirby, Clerk, 17, Bath-rd., Swindon, Wilts. Dep. £3 3s.

PUBLIC APPOINTMENTS.

SEPTEMBER 23.

***Leicester T.C.**—Temporary Rescue Training Instructor. J. L. Beckett, M.Inst.C.E., City Eng. and Sur.

SEPTEMBER 26.

***Exmouth U.D.C.**—Temporary Architectural Assistant or Building Surveyor. Bertram F. Holden, A.M.Inst.C.E., Eng. and Sur.

SEPTEMBER 30.

Coventry T.C.—Engineering Assistant. Norman J. Pugh, A.M.Inst.C.E., Water Eng. and Manager.

OCTOBER 3.

***Somerset C.C.**—Assistant Architect. R. O. Harris, County Architect, Park-st., Taunton.

Control of Stone, Slag and Lime.

THE Minister of War Transport has made an Order, which is now in force, for the control of stone, slag and lime. The Order applies to such persons, being producers, distributors or users of any material specified in the schedule, as the Minister may by written notice to such persons direct. The materials specified in the schedule include practically all igneous, metamorphic and sedimentary rocks, lime (except chalk lime), and slag (except basic slag).

No person to whom the Order applies shall acquire, use or dispose of any of the materials specified except under the authority of a licence from the Minister. The Minister may attach to such a licence such conditions as he may deem necessary, including the price at which the materials may be sold or bought, and the licence may be rescinded or varied at any time. The Order gives the Minister power to require any person to whom it applies—

(i) to produce books, accounts or other documents relating to his undertaking;
(ii) to furnish estimates, returns or information relating to the undertaking;
(iii) to permit entry and inspection of his premises; and
(iv) to give samples of any of the materials mentioned in the schedule.

Copies of the Order entitled "The Control of Stone, Slag and Lime Order, 1941" (Statutory Rules and Orders, 1941, No. 1302), may be obtained from H.M. Stationery Office, Kingsway, W.C.2, on and after Monday next.

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A.R.P. SCHEMES

LONDON.

Wandsworth.—Contracts for the adaptation of private basement shelters have been placed with Messrs. Panton and Co., W. J. Ryland, and H. Franklin.—Contract for 2,160 unit heaters for shelters has been placed with Belling and Co., Ltd., at 11s. 6d. each.—Messrs. F. C. Flack are to construct 5,000 bunks from salvaged timber, at £2,800.—Contracts for extending Anderson four-person shelters to standard size have been placed with Messrs. Snelling and Rayment, P. G. Woodley, Ltd., E. Parry and Co., A. D. Wire and Co., R. Bilham and Sons, Mercer Taylor and Co., Bleach and Dorey, Ltd., Mears Bros. Contractors, Ltd. The Boro' Eng. has agreed a schedule of prices for this work with various contractors as follows: Extending four-person shelters to standard size, £2 8s.; extra for breaking out concrete floor and high walls, £1 1s.; extra for break-out concrete floor and kerb only, 10s. 6d.—The Council are to undertake additional works, largely required for gas protection, at three F.A. posts, at £755.—Council are to erect new cleansing station at Putney, at £1,850; also have placed contracts for additional works at Tooting and Clapham with W. H. Lorden and Sons (£230) and H. Bacon and Sons (£228), respectively. Messrs. Bacon are also to erect warden's post, at £125.—Contracts have been placed with Bridge, Walker and Co. (£4,520), W. W. Dawes, Ltd. (£5,060), and Leonard Yates, Ltd. (£5,151), for strengthening 60 communal shelters.

PROVINCIAL.

Ashton-under-Lyne.—T.C. proposes to provide first-line rest centre for 1,150 and for second-line to accommodate 10,000.

Blyth.—T.C. to strengthen shelters. Plans by T. Wilson, Boro' Eng.

Bournemouth.—T.C. have placed following contracts for cleansing stations: Linden Hall, G. E. and W. J. Lambert, £1,758 11s. 4d.; Bourne Hall, F. Hoare and Sons, £1,698; Southbourne Cliffs Hotel, G. Shears and Sons, £1,495; Marshallsay's Laundry, V. L. Young, £1,795.

Hebburn-on-Tyne.—U.D.C. to proceed with strengthening communal shelters.

Keighley.—T.C. accepted tender of B. R. Roff and Son, Mariners-rd., for works to domestic shelters, and tender of H. Burrell, Albert-st., Cross Roads, nr. Keighley, for domestic basement shelters. Plans by R. Courtenay, A.M.I.C.E., Boro' Eng. and Sur.

Lewes.—T.C. seeking sanction from M.H. to strengthen school shelters.

Manchester. — T.C. propose gas-cleansing facilities at Monsall Hospital. Plans by G. Noel Hill (F.), City Architect.

Morpeth. — Contract for A.R.P. store, for C.C., has been placed with J. W. Urpeth, Bedlington, Northumberland.

Northwich.—U.D.C. propose: Strengthening existing communal shelters; erection of additional shelters. Plans by Frank L. James, Sur.

Runcorn.—U.D.C. to provide canteens for certain shelters and for basement shelter at Technical Institute; also plans to be prepared for heating of shelters.

Scarborough. — T.C. to supply electricity for heating and lighting at school shelters, for North Riding E.C.

Southwell.—R.D.C. accepted tender of M. Thacker, 120, Southwell-rd., East Rainworth, Blidworth, Notts, for erection of communal surface shelters in three areas. Plans by S. Cooper, Sur.

Spenborough.—U.D.C. received permission to proceed with erection of communal surface shelters in urban district.—U.D.C. propose the provision of control-room. Plans by J. Wallbank, Sur., Town Hall, Cleckheaton.

Worksop.—R.D.C. propose shelter accommodation at Council Offices. Plans by W. Flint, Sur.

SCOTLAND.

Cambuslang. — Plans passed for report centre, the architect being William Watt, County Offices, Albert-st., Motherwell.

Dumfries.—Corporation to erect 430 shelters to plans by R. S. Osbourne, Architect and Sur., Municipal Buildings.

Glasgow. — T. Somers, Burgh Architect, prepared plans for shelters at Law-st. and Feilden-st.

Glasgow.—Findlay and McGeedan, Ltd., have secured contract, at £913 17s. 4d., for shelters at a hospital. T. Somers is architect.

Glasgow.—J. Graham and Co., Ltd., have secured the contract for decontamination centre at a hospital. T. Somers, Municipal-bldgs., is architect.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st JUNE, 1941

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors]

	Crafts-men.	Lab-ourers.
Aberaron	1/10½	1/5½
Aberdare	1/10½	1/5½
Abergavenny	1/10½	1/5½
Abingdon	1/9	1/4½
Accrington	1/10½	1/5½
Aldeburgh	1/7	1/3
Aldershot	1/9	1/4½
Alfreton	1/10½	1/5½
Alnwick	1/10	1/5
Altrincham	1/10½	1/5½
Amble	1/10	1/5½
Amersham	1/9	1/4½
Ammanford	1/10½	1/5½
Andover	1/8½	1/4½
Ardingly	1/8½	1/4½
Arundel	1/8½	1/4½
Ascot	1/8½	1/4½
Ashby-de-la-Zouch	1/10½	1/5½
Ashford (Kent)	1/8½	1/4½
Ashford (Middlesex)	1/10½	1/5½
Ashington	1/10	1/5½
Ashtead	1/10½	1/5½
Ashton-under-Lyne	1/10½	1/5½
Aylesbury	1/8½	1/4½
Aylsham	1/7½	1/3½
Bagshot	1/8½	1/4½
Banbury	1/8½	1/4½
Barnsley	1/10½	1/5½
Barnstaple	1/8½	1/4½
Barrow-in-Furness	1/10½	1/5½
Barry	1/10½	1/5½
Basingstoke	1/8½	1/4½
Bath	1/10	1/5½
Batley	1/10½	1/5½
Beaconsfield	1/9	1/4½
Beccles	1/7	1/3
Bedford	1/10	1/5½
Berkhamsted	1/8½	1/4½
Berwick	1/10	1/5½
Beverley	1/10½	1/5½
Bexhill-on-Sea	1/9	1/4½
Bideford	1/8½	1/4½
Biggleswade	1/8½	1/4½
Billericay	1/8	1/3½
Birchington	1/8½	1/4½
Birkenhead	‡2/0½	¶
Birmingham	†1/10½	1/5½
Bishop Auckland	1/10½	1/5½
Bishop's Stortford	1/9½	1/5
Blackburn	1/10½	1/5½
Blackpool	1/10½	1/5½
Blyth	1/10½	1/5½
Bognor Regis	1/8½	1/4½
Bolton	1/10½	1/5½
Bournemouth	1/9½	1/5
Bracknell	1/8½	1/4½
Bradford	1/10½	1/5½
Bradford-on-Avon	1/7½	1/3½
Braintree	1/8½	1/4½
Brentwood	1/10	1/5½
Bridgwater	1/9	1/4½
Bridlington	1/10	1/5½
Brighouse	1/10½	1/5½
Brighton	1/8½	1/5
Bristol	1/10½	1/5½
Broadstairs	1/8½	1/4½
Bromsgrove	1/10	1/5½
Buckley	1/10½	1/5½
Bungay	1/8½	1/3½
Burnham-on-Crouch	1/7	1/3
Burnley	1/10½	1/5½
Burslem	1/10½	1/5½
Burton-on-Trent	1/10½	1/5½
Bury	1/10½	1/5½
Bury St. Edmunds	1/8	1/3½
Buxton	1/10	1/5½
Byfleet	1/9	1/4½
Cambridge	1/10½	1/5½
Canterbury	1/8½	1/4½
Cardiff	1/10½	1/5½
Carlisle	1/10½	1/5½
Carnforth	1/10½	1/5½
Castleford	1/10½	1/5½
Caterham	1/10½	1/5½
Chard	1/7½	1/3½
Chatham	1/9½	1/5
Chelmsford	1/10	1/5½
Cheltenham	1/9½	1/5
Chepstow	1/10	1/5½
Chertsey	1/9½	1/5
Chester	1/10½	1/5½
Chesterfield	1/10½	1/5½
Chichester	1/8½	1/4½
Chorley	1/10½	1/5½
Cirencester	1/8	1/3½
Clacton	1/8½	1/4½
Cleveleys	1/10½	1/5½
Clitheroe	1/10½	1/5½
Cobham (Surrey)	1/9½	1/5
Colchester	1/10	1/5½
Colwyn Bay	1/9½	1/5
Congleton	1/10	1/5½
Coventry	1/10½	1/5½
Cranbrook	1/8½	1/4½
Cranleigh	1/8½	1/4½
Crawley	1/8½	1/4½
Crewe	1/10	1/5½
Cromer	1/7½	1/3½
Crowborough	1/8½	1/4½
Cuckfield	1/8½	1/4½
Darlington	1/10½	1/5½
Darwen	1/10½	1/5½
Daventry	1/9	1/4½
Deal	1/8½	1/4½
Denbigh	1/9½	1/5
Derby	1/10½	1/5½
Devizes	1/7½	1/3½
Dewsbury	1/10½	1/5½
Didcot	1/8½	1/4½
Diss	1/7	1/3
Doncaster	1/10½	1/5½
Dorchester	1/8	1/3½
Dorking	1/9	1/4½
Dover	1/8½	1/4½
Dovercourt	1/8½	1/4½
Driffield	1/9	1/4½
Droitwich	1/10	1/5½
Dudley	1/10½	1/5½
Dunstable	1/9	1/4½
Durham City	1/10½	1/5½
Eastbourne	1/9½	1/5
E. Glam. (Mon. Val.)	1/10½	1/5½
East Grinstead	1/8½	1/4½
Edenbridge	1/8½	1/4½
Ely	1/7½	1/3½
Epping	1/10½	1/5½
Exeter	1/10	1/5½
Exmouth	1/9	1/4½
Fakenham	1/7½	1/3½
Falmouth	1/9	1/4½
Fareham	1/9½	1/5
Faversham	1/8½	1/4½
Felixstowe	1/9½	1/5
Filey	1/9	1/4½
Fleetwood	1/10½	1/5½
Flint	1/10½	1/5½
Folkestone	1/8½	1/4½
Frinton-on-Sea	1/8½	1/4½
Frome	1/7½	1/3½
Gainsborough	1/9½	1/5
Gateshead	1/10½	1/5½
Gillingham (Kent)	1/9½	1/5
Glossop	1/10½	1/5½
Gloucester	1/10	1/5½
Godalming	1/8½	1/4½
Goole	1/10½	1/5½
Gosport	1/10	1/5½
Grantham	1/9½	1/5
Gravesend	1/10	1/5½
Great Yarmouth	1/8½	1/4½
Grimsby	1/10½	1/5½
Guildford	1/8½	1/4½
Guisborough	1/9	1/4½
Halifax	1/10½	1/5½
Hanley	1/10½	1/5½
Harpenden	1/8½	1/5
Harrogate	1/10½	1/5½
Hartlepools	1/10½	1/5½
Harwich	1/8½	1/4½
Haslemere	1/8½	1/4½
Hastings	1/8½	1/4½
Hatfield	1/10	1/5½
Haywards Heath	1/8½	1/4½
Hednesford	1/10	1/5½
Hemel Hempstead	1/9½	1/5
Henley-on-Thames	1/8½	1/4½
Hereford	1/9½	1/4½
Herne Bay	1/8½	1/4½
Hertford	1/10	1/5½
Heysham	1/10½	1/5½
Hitchin	1/9½	1/5
Hoddesdon	1/10	1/5½
Holt (Norfolk)	1/7	1/3
Horley	1/8½	1/4½
Horsham	1/8½	1/4½
Horwich	1/10½	1/5½
Huddersfield	1/10½	1/5½
Hull	1/10½	1/5½
Hunstanton	1/7½	1/3½
Huntingdon	1/8	1/3½
Ilfracombe	1/8½	1/4
Ingatestone	1/9	1/4½
Ipswich	1/10	1/5½
Isle of Thanet	1/8½	1/4½
Isle of Wight	1/8	1/3½
Keighley	1/10½	1/5½
Kenilworth	1/10½	1/5½
Kettering	1/10½	1/5½
Kidderminster	1/10	1/5½
King's Lynn	1/8½	1/4½
Kirkham	1/10½	1/5½
Knowle	1/10	1/5½
Lancaster	1/10½	1/5½
Leamington	1/10½	1/5½
Leatherhead	1/9½	1/5
Leeds	1/10½	1/5½
Leicester	1/10½	1/5½
Leighton Buzzard	1/7½	1/3½
Letchworth	1/9½	1/5
Lewes	1/8½	1/4½
Lichfield	1/9½	1/5
Lincoln	1/10½	1/5½
Littlehampton	1/8½	1/4½
Liverpool	‡2/0½	¶
Llandudno	1/9½	1/5
Llanelly	1/10½	1/5½
London—		
12m. radius	*2/0	1/5½
12-15 m. radius	*1/11½	1/5½
Long Eaton	1/10½	1/5½
Longton	1/10½	1/5½
Loughborough	1/10½	1/5½
Louth	1/9	1/4½
Lowestoft	1/8½	1/4½
Luton	1/10	1/5½
Macclesfield	1/10	1/5½
Maidenhead	1/9½	1/5
Maidstone	1/9	1/4½
Malvern	1/9	1/4½
Manchester	1/10½	1/5½
Manningtree	1/7½	1/3½
Mansfield	1/10½	1/5½
March	1/7½	1/3½
Margate	1/8½	1/4½
Market Harborough	1/9½	1/5
Matlock	1/9	1/4½
Melton Constable	1/7	1/3
Melton Mowbray	1/9½	1/5
Merthyr	1/10½	1/5½
Middlesbrough	1/10½	1/5½
Middleton	1/10½	1/5½
Middlewich	1/10	1/5½
Milford Haven	1/9	1/4½
Morecambe	1/10½	1/5½
Morley	1/10½	1/5½
Mundesley	1/7½	1/3½
Nantwich	1/10	1/5½
Nelson	1/10½	1/5½
Newark-on-Trent	1/10	1/5½
Newbury	1/8½	1/4½
Newcastle-on-Tyne	1/10½	1/5½
Newcastle-u.-Lyme	1/10½	1/5½
New Forest	1/8½	1/4½
Newmarket	1/8½	1/4½
Newport, Mon.	1/10½	1/5½
Newport Pagnell	1/8½	1/4½
Northampton	1/10½	1/5½
Norwich	1/10½	1/5½
Nottingham	1/10½	1/5½
Nuneaton	1/10½	1/5½
Oakham	1/9	1/4½
Oldham	1/10½	1/5½
Ormskirk	1/10½	1/5½
Oxford	1/10	1/5½
Oxted	1/9	1/4½
Paignton	1/10	1/5½
Peterborough	1/10	1/5½
Plymouth	1/10½	1/5½
Pontefract	1/10½	1/5½
Pontypridd	1/10½	1/5½
Port Talbot	1/10½	1/5½
Portsmouth	1/10	1/5½
Preston	1/10½	1/5½
Pulborough	1/8½	1/4½
Ramsgate	1/8½	1/4½
Reading	1/10	1/5½
Redditch	1/10	1/5½
Redhill	1/9	1/4½
Ripon	1/9	1/4½
Rochdale	1/10½	1/5½
Rochester	1/9½	1/5
Rugby	1/10½	1/5½
St. Albans	1/10	1/5½
St. Helens	1/10½	1/5½
St. Neots	1/8	1/3½
Saffron Walden	1/7½	1/3½
Salisbury City	1/8	1/3½
Salisbury Plain	1/9½	1/5
Sawbridgeworth	1/9	1/4½
Saxmundham	1/7	1/3
Scarborough	1/10	1/5½
Scunthorpe	1/10½	1/5½
Selby	1/10½	1/5½
Sevenoaks	1/9	1/4½
Sheerness	1/8½	1/4½
Sheffield	1/10½	1/5½
Shipley	1/10½	1/5½
Shoeburyness	1/10	1/5½
Shoreham	1/9½	1/5
Shrewsbury	1/10	1/5½
Sittingbourne	1/8½	1/4½
Skegness	1/9½	1/5
Sleaford	1/9	1/4½
Slough	1/9½	1/5
Southampton	1/10	1/5½
Southend-on-Sea	1/10	1/5½
Southport	1/10½	1/5½
South Shields	1/10½	1/5½
Spalding	1/8½	1/4½
Stafford	1/10	1/5½
Staines	1/9½	1/5
Stamford	1/9½	1/5
Stevenage	1/9½	1/5
Stockport	1/10½	1/5½
Stockton-on-Tees	1/10½	1/5½
Stoke-on-Trent	1/10½	1/5½
Stourbridge	1/10½	1/5½
Stourport	1/10	1/5½
Stowmarket	1/7½	1/3½
Stratford-on-Avon	1/9½	1/5
Stroud	1/9½	1/5
Sunderland	1/10½	1/5½
Sutton Coldfield	1/10½	1/5½
Swaffham	1/7	1/3
Swanage	1/8½	1/4½
Swansea	1/10½	1/5½
Swindon	1/9	1/4½
Tamworth	1/10	1/5½
Taunton	1/9	1/4½
Tenterden	1/8½	1/4½
Thames Haven	1/10½	1/5½
Thetford	1/8	1/3½
Thorpe Bay	1/10	1/5½
Todmorden	1/10½	1/5½
Tonbridge	1/9	1/4½
Torquay	1/10	1/5½
Totnes	1/8½	1/4½
Trowbridge	1/7½	1/3½
Truro	1/8	1/3½
Tunbridge Wells	1/9	1/4½
Uppingham	1/9	1/4½
Uttoxeter	1/9	1/4½
Wakefield	1/10½	1/5½
Walsall	1/10½	1/5½
Walsden	1/10½	1/5½
Walton-on-Naze	1/8½	1/4½
Ware	1/10	1/5½
Warminster	1/7½	1/3½
Warrington	1/10½	1/5½
Warwick	1/10½	1/5½
Wellington R.D.	1/10	1/5½
Welwyn	1/9½	1/5
Welwyn Gar. City	1/10½	1/5½
Wells (Norfolk)	1/7	1/3
West Bromwich	1/10½	1/5½
Westcliff-on-Sea	1/10	1/5½
Weston-super-Mare	1/9½	1/5
Weybridge	1/9½	1/5
Weymouth	1/8½	1/4½
Whitby	1/9	1/5
Whitstable	1/8½	1/4½
Widnes	1/10½	1/5½
Wigan	1/10½	1/5½
Wigton	1/9	1/4½
Willington	1/10½	1/5½
Wilmslow	1/10½	1/5½
Winchester	1/9	1/4½
Windermere	1/9	1/4½
Windsor	1/9½	1/5
Wisbech	1/8	1/3½
Witham	1/8½	1/4½
Woking	1/9	1/4½
Wokingham	1/8½	1/4½
Wolverhampton	1/10½	1/5½
Woodbridge	1/8	1/3½
Worcester	1/10	1/5½
Workington	1/9	1/4½
Worksop	1/10	1/5½
Worthing	1/8½	1/4½
Wrexham	1/10	1/5½
Wroxham	1/8	1/3½
Wycombe	1/9½	1/5
Wymondham	1/7½	1 3½
Yeovil	1/9	1/4½
York	1/10½	1/5½

* Painters 1d. less than other Craftsmen. † Plus 2d. per working day. ‡ Plasterers 2/1.
¶ Tradesman's Labourers, 1/8½. Navvies and General Labourers, 1/6½.
§ Joiners, Plumbers, Bricklayers, Tilers and Masons receive 2/- per week or 4d. per day Tool Money.
NOTE.—Carpenters and Joiners in all Towns and Districts (other than Birkenhead and Liverpool) receive 3d. per day Tool Allowance
For Building Trade Wages in Scotland, see page 274

PRICES CURRENT OF MATERIALS*

Note: Owing to the exceptional circumstances which prevail at the present time prices of materials should be confirmed by inquiry. The prices of soft woods are for cash on delivery.

At present linseed oil and genuine spirits of turpentine can only be supplied in cans in small quantities.

BRICKS, &c.

The price for Stock Bricks has been altered to minimum price at works for full lorry loads. Sittingbourne district. A quotation for carriage should be obtained as the haulage question is difficult.

	£ s. d.
First Hard Stocks ..... per 1,000	£4 5 6
Second Hard Stocks ..... "	2 18 6
Mild Stocks ..... "	2 5 6
Single Rough Stocks ..... "	2 19 6
Third Common Stocks ..... "	2 10 0

2½ in. Phorpres. A discount of 6d. 1,000 only monthly account.	King's Cross Station per 1,000.	To sites in W.C. District. per 1,000.
	a. d.	a. d.
Pressed	51 9	58 3
Keyed	53 9	60 3
Single Bullnose	71 9	78 3
Rustics	71 9	78 3
Whites	72 3	78 3

	£ s. d.
White Midhurst Best selected (delivered London site)	5 10 0
Best blue Pressed Staffs. (London Stns.) ..	10 2 0
Do. Bullnose (London Stns.)	10 12 0
Blue Wire Cuts (London Stns.)	8 19 6

Best Stourbridge Fire Brick (London Stns.):—
2½ in. ..... 10 0 0 3 in. 12 0 0

GLAZED BRICKS. (London Stns.)

Best White Ivory and Salt Glazed Stretcher	28 0 0	D'ble Str'tch'rs .. D'ble Headers .. One side&two ends	36 10 0 33 10 0 37 10 0
Headers	27 10 0	Two sides&one end	38 10 0
Quoins, Bullnose and 4½ in. Flats	34 10 0	Splays and Squints	36 0 0

Second Quality, £2 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

PARTITION SLABS.

Delivered London Area.

"PHORPRES" HOLLOW PARTITION BLOCKS.

2" per yd. sup.	2 3	3" per yd. sup.	2 9
2½" " "	2 6	4" " "	3 1

CLINKER CONCRETE.

2" per yd. sup.	1 9	3" per yd. sup.	2 6
2½" " "	2 1	4" " "	3 4

CRANHAM-TERRA COTTA.

Size 12 x 9 x 2" per yd. super	2 6
Size 12 x 9 x 2½ " "	2 9
Size 12 x 9 x 3" " "	3 3
Size 12 x 9 x 4" " "	3 7

Plus 2d. for smooth one side, and 4d. for smooth both sides.

Delivered: Free on site London area.

HEMPSTEAD—KEYED TWO SIDES.

12" x 9" x 2"	2 6	12" x 9" x 3"	3 0
12" x 9" x 2½"	2 9	12" x 9" 4"	3 9

Per yard super d/d. Free on site, London.

SAND.

Thames Ballast	9 6 per yd.		
Pit Ballast	9 0 " "	delivered	
Pit Sand	11 6 " "	2 miles	
Washed Sand	13 0 " "	radius	
¼ in. Shingle	10 0 " "	Paddington.	
½ in. Broken Brick	15 6 " "		
Pan Breeze	9 6 " "		

CEMENT.

Best British Portland Cement. Standard Specification.	£ s. d.
Delivered London Area.	
6 ton loads and upwards site. ..... Per ton	2 9 6
1 ton to 6 tons site	2 12 6
Alongside Vauxhall in 80 ton lots	2 7 0
"Ferrocrete" Rapid Hardening Cement—	
6 ton loads and upwards site	2 15 6
1 ton to 6 tons site	2 18 6
Alongside Vauxhall in 80 ton lots	2 12 0

Stored in Reserved Bins at works. 1/6 per ton extra.

"Aquacrete" Water Repellent, "Blue Circle" cement, 30/- per ton extra on ordinary "Blue Circle" prices.

"Colorcrete" Nos. 1 and 2. Coloured Rapid Hardening Portland Cement, in 6-ton lots.. 3 19 6

"Colorcrete" not rapid hardening, according to colour, from £7 to £15 10s. per ton.

"Snowcrete" White Portland Cement 10 5 0

"417" Cement (Ultra Rapid Hardening) Delivered site London Area in 6 ton lots and upwards ..... per ton 3 9 6

Plus packages at current prices.

Super Cement (Waterproof), *bags extra* 3 19 6

NOTE.—Paper bags will be charged at the rate of 6/- nett per ton. Jute sacks charged 1s. 9d. nett each and 1/6 nett each allowed if returned to works within two weeks, in good condition.

Carriage will be paid by makers on returned empty jute sacks.

Roman Cement: £8 0 Keene's Cement, White £7 0 0
Parian Cement 7 0 " " Pink 6 10 0
Cementone Colours for cement according to tints per cwt. from £2 10s. 0d.

PLASTER.

	£ s. d.		£ s. d.
Coarse, Pink	4 0 0	Sirapite, Coarse..	4 5 6
" White ..	4 7 6	" Finish..	4 13 0
Pioneer	4 5 0		

Above prices for 4-ton loads and over London Area.

Best Ground Blue Lias Lime	2 0 6	Grey Stone Lime Chalk Lime.	2 14 6 2 14 6
Granite Chippings	1 15 0	Hair per cwt. ..	2 7 6

NOTE.—Sacks are charged 1s. 9d. each, and credited 1s. 6d., if returned in good condition within three months, carriage paid.

Stourbridge Fireclay in paper bags, £2 12 6 in 6-ton lots at railway depot.

STONE.

	s. d.
BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	3 2½

	s. d.
BEER STONE—RANDON BLOCK— Free on rail at Seaton Station.. per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. "	3 1½
Selected approximate size one way, 1d. per cubic ft. extra, selected approximately three sizes or for special work, 3d. per cubic ft. extra.	
PORTLAND STONE— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 7
Do. do. delivered on road waggons as above stations, per ft. cube	4 7
White basebed, 3d. per ft. cube extra.	
NOTE.—1d. per ft. cube extra for every ft. over 20 ft. *average* and ½d. beyond 30 ft.	
HOPTON-WOOD STONE— F.O.R. Quarries, Wirksworth, Derbyshire, Random blocks from 10 ft. and over F.ft.cb.	13 2
Sawn two sides	26 11
Sawn three or four sides	31 11
YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station, London.	
6 in. sawn two sided landings to sizes (under 20 ft. super) ..... per ft. super	5 6
6 in. rubbed two sides, ditto .. "	6 3
3 in. sawn two sides slabs (random sizes) ..... "	2 7
2 in. to 2½ in. sawn one side slabs (random sizes) (paving) ..... "	1 8½
1½ in. to 2 in. ditto ..... "	1 4½
HARD YORK— Delivered at any Goods Station, London.	
Scrappled random blocks. ..... per ft. cube	6 10
6 in. sawn two sides landings to sizes (under 40 ft. super) ..... per ft. super	5 7½
6 in. rubbed two sides, ditto .... "	6 9
4 in. sawn two sides slabs (random sizes) ..... "	3 5
3 in. ditto ditto ..... "	2 8
2 in. self-faced random flags ..... per yd. super	5 9

CAST STONE.

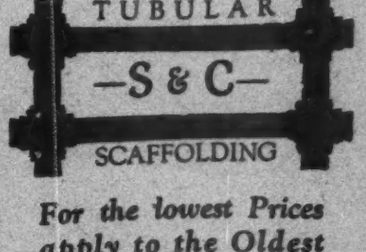
Delivered in London area in full van loads, per ft. cube: Plain, 7s. 6d. Moulded, 8s. 6d.
Small section cills and copings, 11s.

HARD WOOD.

1 INCH AND UP THICK.

Average price for prime quality.	Foot cube. £ s. d.
Dry English Wainscot Billets..	16 0 to 0 18 0
Dry Slavonian Billet Wainscot	17 0 to 1 0 0
Dry Cuba Mahogany logs ..	21 0 to 1 4 0
Square-edged Honduras Mahogany	0 16 6
Log Cut Honduras Mahogany	0 17 6
American Figured Oak	0 13 0
American Plain Oak	0 12 6
Jap. Figured Oak	0 13 0
Jap. Plain Oak	0 12 0
Teak	0 15 6
American Whitewood	0 12 6
African Whitewood	0 8 0
African Mahogany	0 11 0
Australian Walnut	0 19 9
Australian Silky Oak	0 12 6
Best Scotch glue per cwt.	5 0 0
Liquid glue, per gallon.	1 2 0

Having Secured the Contract— What about the Steel Scaffolding?



For the lowest Prices apply to the Oldest Firm in the Scaffolding Trade.

STEPHENS & CARTER LTD.
The British Steel Scaffolding Co.
731-761, HARROW RD., N.W.10.
Telephone No. Ladbroke 1191 (6 lines).

SOFT WOOD.

MERCHANTABLE BRITISH COLUMBIAN PINE.

	Minimum. £ a. d.	Maximum. £ s. d.
Scantlings in imported sizes.		
2 in. by 3 in. to 4 in. by 11 in.	43 10 0	53 0 0

PLANED BOARDS.

PRIME CLEAR BRITISH COLUMBIAN PINE.

	Per standard. £ s. d.
1 in. by 11 in. } 1 in. by 9 in. }	67 10 0

	Per square. s. d.
1 in. plain edge flooring	53 0
1¼ in. ditto	66 0
1 in. tongued and grooved	53 0
1¼ in. ditto	66 0

MATCHING.

	Per square. s. d.
¾ in.	37 6
¾ in.	42 6
1 in.	55 0

SLATES.

First quality slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12	45 5 0	18 by 10	24 0 0
22 by 12	37 17 6	18 by 9	22 12 6
22 by 11	34 2 6	16 by 10	21 10 0
20 by 12	33 0 0	16 by 8	16 12 6
20 by 10	30 5 0		

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons. ..... Per 1,000 f.o.r. London

	£ s. d.
Best machine-made tiles from Broseley or Staffordshire district, ...	5 6 6
Ditto hand-made ditto	6 7 6
Ornamental ditto	6 14 0
Hip and valley tiles (per dozen) { Hand-made	0 12 9
	{ Machine-made	0 12 3

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	£ s. d.
R.S. Joists, cut and fitted	£22 10 0
Plain Compound Girders	25 0 0
" Stanchions	27 10 0
In Roof Work	32 10 0

NOTE.—These prices are for standard pieces and not special pieces of an awkward nature.

MILD STEEL ROUNDS.—To London Stations, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	22 5 0	⅜ in. to ½ in.	20 15 0
⅝ in.	21 5 0	¾ in. to 2½ in. ..	20 5 0

WROUGHT TUBES AND FITTINGS.

Deliveries from works.

Deliveries from London stock further 2½% gross.

Fittings. 10/17

Tubes.	Tubulars. and		Flanges.	
⅛"/⅜" %	⅛"/⅜" %	12/24 %	⅛"/⅜" %	½"/6" %
Light weight ..	51½	—	47½	51	57½
Heavy weight	44	44	39½	41	49½
Galv.lightweight	40½	—	36½	39½	48½
Galv.heavyweight	31	31	31	29½	41

Tubes and tubulars sizes ⅛"/1" inclusive, charged extra of 5% less gross.

Fittings. Figs. 25/34 5% less gross discount.

Terms.—Nett cash end of month following date of invoice. Carriage paid on lots of £10 nett value and over.

C.I. HALF-ROUND GUTTERS—London Prices ex Works. per yd. in 6 ft. lengths.

	Gutters.	Nozzels.	Stop ends.
3 in.	1/5	1/1½	4½d.
3½ in.	1/6½	1/3½	4½d.
4 in.	1/8½	1/6	6½d.
4½ in.	1/7½	1/7½	6d.
5 in.	1/11	1/9	8½d.

O.G. GUTTERS.

3 in.	1/9½	1/6½	4½d.
3½ in.	2/0½	1/8½	6½d.
4 in.	2/0½	1/7½	7½d.
4½ in.	2/1½	1/10½	8½d.
5 in.	2/7	2/1½	9½d.

RAIN WATER PIPES.

Per yd. in 6 fts.	Pipe.	Bends.	Branches. Stock angles.
2 in.	2/1½	1/5	2/1
2½ in.	2/3½	1/7½	2/5½
3 in.	2/7½	2/0½	2/9½
3½ in.	3/1	2/5	3/0
4 in.	3/7	2/10½	4/2½

NETT PRICES.

Tonnage allowance—4-ton lots, 5 per cent.
2-ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices, ex Stock.

Per yd. in 6 fts.	Pipe	Bends.	Branches.
2 in.	3/6½	2/5½	3/0½
2½ in.	4/2½	2/9	3/9½
3 in.	4/6½	3/0½	4/0
3½ in.	4/7½	3/3½	5/3
4 in.	5/0½	4/2½	6/0½

L.C.C. COATED DRAIN PIPE.

	Pipe.	Bends.	Branches.
3 in. per yd. in 9 fts. cwt. qr. lbs.	5/5	4/3	9/11
4 in. 1 1 20.	7/11	7/1	12/6
5 in. 1 2 22.	9/7	12/0	19/3
6 in. 2 0 6	11/5	14/3	24/0

Gaskin, 75/- per cwt.

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information. Prices are subject to 2½ per cent. cash discount.

PRICES CURRENT OF MATERIALS—(contd.)

	Per ton basis in London. £ s. d.
IRON.—Staffordshire Crown, Merchant quality	18 7 6
IRON.—Staffordshire Marked Bars	19 7 6
Mild Steel Bars	19 15 0
Mild Steel Hoops	21 10 0
	Ex Merchant's Stock, per ton (two-ton lots).
Soft Steel Sheets, C.R. and C.A.—	
20 gauge	24 17 6
24 gauge	25 2 6
26 gauge	25 17 6
Galvanised Corrugated Sheets, 6 ft. to 9 ft.—	
20 gauge	27 0 0
24 gauge	27 10 0
26 gauge	28 15 0
Galvanised Flat Sheets, C.R. and C.A.—	
20 gauge	28 10 0
24 gauge	29 0 0
26 gauge	30 5 0
	Per ton. £ s. d.
Cut Nails, 3 in. and up	28 10 0

ALL NETT.

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

COPPER.

Seamless copper tubes (basis)	per lb.	1/3
Strong sheet	"	1/8
Thin sheet	"	1/7
Copper nails	"	1/6
" wire	"	1/6

PLUMBERS' BRASS WORK.

Delivered in London.
Stamped by Met. Water Board.

CROWN HEAD S.D. BIB COCKS FOR IRON. EASY CLEAN.

½ in.	¾ in.
34/-	53/- per doz.

CHROMIUM PLATED TOILET S.D. BIB COCKS FOR IRON. EASY CLEAN.

½ in.	¾ in.
60/-	86/- per doz.

S.D. STOP COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
37/6	53/-	87/-	202/-	288/-	460/-	per doz.

S.D.S. COCKS WITH TWO UNIONS FOR LEAD.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
47/-	75/6	130/-	226/-	360/-	568/-	per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
1/10	3/9	15/9	27/3	44/-	63/6	per doz.

HEAVY CROYDON BALL VALVES. SCREW IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.		
46/-	72/-	120/-	204/-	280/-		per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.	
10/6	12/6	19/3	34/-	45/-	53/-	per doz.

BRASS SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.	
9/9	12/6	22/6	35/-	42/-	per doz.

DRAWN LEAD TRAPS WITH BRASS CLEANING SCREWS.

	1¼ in.	1½ in.	2 in.	3 in.	
3 lb. Lead P.	29/-	36/-	54/-	93/-	per doz.
6 lb. Lead S.	36/-	42/-	67/-	120/-	"

SOLDER.—Plumbers, 1/3. Tinmen's, 1/5. Blow pipe, 1/10 per lb.

PAINTS, &c.

	£ s. d.
Raw Linseed Oil, in drums per gallon	0 5 4
Boiled Linseed Oil, in drums "	0 5 7
Turpentine, in drums (10 gals.) "	0 7 5
Genuine Ground English White Lead, per ton (in not less than 5-cwt. casks).	62 0 0

Extra for 1-cwt. kegs over 5-cwt. casks is 2/9 cwt.

GENUINE WHITE LEAD PAINT—
"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganwyte," "Polaeco," "J" Brand, and other best brands (in 14-lb. tins) not less than 5-cwt. lots, £ s. d. per ton delivered 86 0 0

Red Lead, Dry (packages extra)	per ton	53 0 0
Best Linseed Oil Putty (1 ton lots)	per cwt.	1 1 0
Zinc. XD quality	"	0 2 6

Turpentine substitute can be obtained and prices vary according to the quality from 2/- gallon upwards.

	£ s. d.
SNOWCEM CEMENT PAINT per cwt.	2 16 0
C.M.C. CAMOUFLAGE PAINT "	2 16 0

VARNISHES, &c.

		Per gallon.
Oak Varnish	Outside	0 16 0
Fine do.	"	0 18 0
Fine Copal	"	1 0 0
Pale Copal	"	1 2 0
Pale Opal Carriage	"	1 6 0
Best do. do.	"	1 14 0
Floor Varnish	Inside	1 0 0
Fine Pale Paper	"	1 0 0
Fine Copal Cabinet	"	1 4 0
Fine Copal Flatting	"	1 2 0
Hard Drying Oak	"	1 0 0
Fine Hard Drying Oak	"	1 1 0
Fine Copal Varnish	"	1 2 0
Pale do.	"	1 14 0
Best do.	"	1 4 0
Best Japan Gold Size	"	1 14 0
Best Black Japan	"	0 12 0
Oak and Mahogany Stain (Water)	"	0 14 0
Brunswick Black	"	0 9 0
Berlin Black	"	0 16 0
Knotting (patent)	"	0 17 0
French and Brush Polish	"	0 14 0
Liquid Dryers in Terebene	"	0 11 0
Celtan Black Enamel	"	0 9 0

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.
ORDINARY GLAZING QUALITY (O.Q.) AND SELECTED GLAZING QUALITY (S.Q.).
PER FOOT SUPER.

In sizes not exceeding 80 in. long or 48 in. wide or 110 united inches.

	O.Q.	S.Q.
18 oz. in 200 ft. cases	2½d.	3½d.
24 oz. " 200 ft. "	3½d.	4½d.
26 oz. " 200 ft. "	3½d.	4½d.
32 oz. " 200 ft. "	5½d.	6½d.
24 oz. " 300 ft. "	3½d.	5½d.
26 oz. " 300 ft. "	3½d.	4½d.
32 oz. " 300 ft. "	5½d.	6½d.
18 oz. Obscured Sheet		5½d.
24 oz. Obscured Sheet		6½d.
Fluted, 21 oz.		9d.
Enamelled, 19 oz.		5½d.
" 24 oz.		6½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE AND FIGURED CATHEDRAL, ETC., IN CUT SIZES.

Over 500 ft. super of all kinds.	Per ft.
Rolled plate, ¼ in.	5½d.
Rough cast double rolled, ⅜ in.	6½d.
Rough cast double rolled, ½ in.	6½d.
Figured rolled, and Cathedral, white.	8½d.
Figured rolled and Cathedral, tinted	9½d.
Rolled Sheet	6d.
Reeded, Broad Reeded, Cross Reeded and Chevron Reeded, ¼ in. thick	0 10½

Rolled plate is the same price as rough cast double rolled.

	Per ft. s. d.
Wire Rolled, ¼ in. thick	0 9½
Wired Cast, ¼ in. thick	0 9½
Georgian Wired Cast	0 10
"Calorex" Sheet, 21 oz.	2 6
" " 32 oz.	4 0
" Cast, ¼ in. thick	0 10
" " ⅜ in. thick	1 0
" " ½ in. thick	1 2
Non Actinic Glass, ¼ in. thick	0 9½
" " " ⅜ in. thick	1 0
" " " ½ in. thick	1 2

"VITA" GLASS.

	Per ft. s. d.
"Vita" Plate Glass, about ¼ thick	
To 7 ft. super	5 0
Over 7 ft. super	7 6
"Vita" Sheet Glass, about 18/20 oz.	2 0
Cathedral "Vita" Glass:	
¼ in. thickness	2 0
⅜ in. "	3 0
½ in. Georgian Wired "Vita" Glass	3 6

LEAD, &c.

(Delivered in London.)	Per ton. £ s. d.
LEAD.—Sheet, English, 4 lb. and up	35 10 0
Pipe in coils	35 0 0
Soil pipe	40 10 0
Compo pipe	42 5 0

NOTE.—Country delivery, 20/- per ton extra, lots under 3 cwt. 4/- per cwt. extra and over 3 cwt. and under 5 cwt., 2/6 per cwt. extra. Cut to sizes, 4/- per cwt. extra.

Old lead, ex London area, at Mills per ton £18 0 0.

BUILDING TRADE WAGES IN SCOTLAND

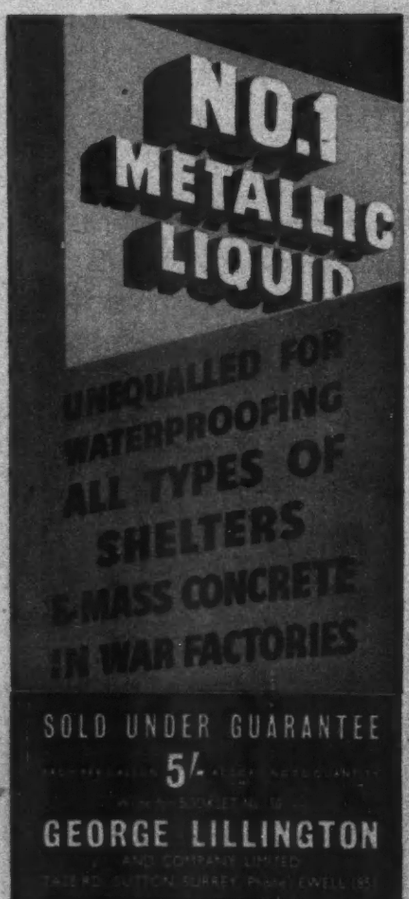
Following are grade rates authorised by the Scottish N.J.C. from June 1. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification	A	A¹	A²	A³	B	B¹
Craftsmen	1/11	1/10½	1/10	1/9½	1/9	1/8½
Labourers	1/5½	1/5½	1/4½	1/4½	1/4	1/3½

Aberdeen	A	Dumfriesshire	A¹	Inverness	*	Perthshire	A²
Ayrshire	A	Dundee	A	Inverurie	A¹	Peterhead	A²
Banff	B	Dunoon	A	Kincardineshire	A¹	Renfrewshire	A
Berwickshire	A²	East Fife	A	Kinross-shire	A	Rothesay	A
Bridge of Allan	A	East Lothian	A	Lanarkshire	A	Roxburghshire	A²
Broughty Ferry	A	Edinburgh	A	Midlothian	A	St. Andrews	A
Clackmannanshire	A	Fifeshire	A	Montfieth	A	Selkirkshire	A²
Doune	A	Perfarshire	A²	Moray and Nairn	B	Stewartry	A²
Dunblane	A	Glasgow	A	Newport	A	Stirlingshire	A
Dumbartonshire	A	Greenock	A	Peebleshire	A²	Stornoway	A²
Dumfries	A¹	Hamilton	A	Perth	A	Tayport	A
						West Lothian	A

* This town has its own rates: Masons, 1/8½; Carpenters, 1/8½; Slaters, 1/8½; Plumbers, 1/9; Plasterers, 1/9½, but 1/10 is paid owing to the scarcity at present; Painters, 1/8½ and Labourers, 1/4.

The information given in this table is copyright. Rates of wages in England and Wales are given on page 272



THE SCOTTISH BUILDER NEW BUILDINGS

ARDROSSAN. — BRITISH RESTAURANT.—Council to proceed immediately with reconstruction of Unionist Club Rooms into a British Restaurant. Plans by Burgh Sur., Burgh-chams.

CAMBUSLANG. — CANTEEN. — Plans prepared by John G. Dunn, architect, 31, Greenlees-rd., for new canteen buildings.

DUNDEE.—HOSPITAL.—T.C. to erect new mental hospital accommodation. Plans by David MacLay, Municipal-bldgs., City-square.

EAST KILBRIDE.—HOSPITAL.—Plans prepared by Watson, Salmond and Gray, Central Station-bldgs., Glasgow, for extensions to the Philipshill Hospital.

ROADMEETINGS.—ELECTRIC INSTALLATION.—To cost £2,270, at the County Hospital. William S. Watt, County Architectural Offices, Albert-st., Motherwell.

RUTHERGLEN. — OFFICES. — Plans prepared by Nelson Briquetting Co., Ltd.'s, Staff Architects for new office buildings at Downiebrae-rd.

RUTHERGLEN. — OFFICES. — Plans prepared for the reconstruction and extensions of offices at Glasgow-rd. Architects are James Monro and Son, 307, West George-st., Glasgow.

OFFICIAL NOTIFICATION

War Damage Act, 1941 (Part II).

The Board of Trade have decided, with the approval of the Treasury, that the premium payable under the Business Scheme for the whole year to September 30, 1942, shall not exceed 30s. per cent. For the period of six months up to March 31, 1942, the rate of premium will be 15s. per cent., which will be payable at the option of the insured either in one sum or in two instalments at 7s. 6d. per cent., each covering the quarterly periods to December 31, 1941, and March 31, 1942. The rate of premium for the subsequent six months will be determined in March next and will not exceed the limit indicated.

CURRENT AND PROPOSED NEW BUILDINGS

Accrington.—T.C. approved: Convenience, for Calico Printers' Association, Ltd.; convenience, for Kay and Grimshaw, Ltd.; lavatories, conveniences, etc., for Howard and Bullough, Ltd.

Adwick-le-Street.—U.D.C. propose conversion of premises for branch library at Great North-rd. Plans by W. S. Ellis, Sur.

Bacup.—T.C. propose to adapt premises at Bacup and Stacksteads as British Restaurants. Plans by H. Guffogg, Boro' Sur.—E.C. propose to carry out external painting work at various schools.

Bellingham.—Hetherington and Wilson, County-chams., Westgate-rd., Newcastle-on-Tyne, are architects for converting Bellingham Town Hall into cinema, for J. A. Baty, of Hexham.—Plans approved: Marshall, Tweedy and Bourn, Grainger House, Blackett-st., Newcastle-on-Tyne, architects for hostel at Wark.

Bishop Auckland.—U.D.C. to establish two British Restaurants.

Blackburn.—Subject to sanction of M.H. the T.C. is to establish day nursery at Preston New-rd. Plans by W. Pickstone, Boro' Sur.

Blyth.—T.C. to extend canteens at three schools. Plans by T. Wilson, Boro' Eng. and Architect.

Bournemouth. — T.C. approved: Store, "Chatfield Hotel," Boscombe Spa-rd.; conversion of 10, Knole-rd., into flats, for R. J. Jones.

Caernarvon. — T.C. seeking sanction to borrow money for improvement of water supply. Plans by H. Evans, Boro' Sur.—Housing Committee propose painting work at 527 houses.

Caernarvonshire.—C.C. propose reconstruction of Farm House, Maesoglan, Ceidio, at £465. Plans by W. Lloyd Jones (L.), County Architect.

Cheshire.—E.C. propose nursery classes at schools at New Ferry, Bebington, Port Sunlight and Bromborough Pool; canteens, at schools; emergency feeding centres, at schools.—C.C. to provide a remand home.

Conisborough.—Amalgamated Denaby Collieries, Ltd., Sheepbridge Works, Chesterfield, propose canteen at Cadeby Main Colliery.

Cookham.—R.D.C. approved: Alterations and additions to existing buildings, Temple Mills, Bisham, for Hugh Stevens and Sons, Ltd. (Subject to conditions.)

Coventry.—T.C. approved: Boiler-house, Banner-la., for A. C. Wickman, Ltd.; canteen, Foleshill-rd., for G. Wilson Gas Meters, Ltd.; store shed, Castle-st., for A. H. Coltman and Son; butter store, Primrose Hill-st., for Maycorn Dairy Co.

Coventry. — T.C. to establish British Restaurant in Hen-la. district; also reconstruction of Old Church-rd. British Restaurant, at £3,000. Plans by D. E. E. Gibson (A.), City Architect.

Derwent. — R.D.C. propose communal feeding.

Farnham.—U.D.C. approved: Offices, etc., West-st., for Crosby and Co., Ltd.; alterations, 102, East-st., for E. J. Paul.

Fleet. — U.D.C. approved: Workshop, Albert-st., for County Commercial Cars, Ltd.

Gateshead. — T.C. seeking sites for four more British Restaurants. F. H. Patterson is Boro' Eng.

Gosforth. — U.D.C. to set up British Restaurant at South Cross-st., at £575. Plans by C. Wyld, Sur.

Hinckley.—U.D.C. approved: Alterations and additions to lavatories, for Hinckley Knitting Co.; glass annexe, Spring-gdns., for Premier Hat and Shoe Co.

Lees.—U.D.C. proposes a sewerage scheme, at £792. Plans by A. Anderson, Sur.

Macclesfield.—Feeding Centre Committee propose adaptation of Park Green Schools for British Restaurant. Plans by Max Tetlow (A.), Boro' Architect, Pear Tree House, Jordangate.

Manchester.—T.C. approved: Conversion of premises, Chorlton-on-Medlock, for day nursery; dining-room and sanitary conveniences, for E. Butterworth and Co., Ltd. (A. J. Freeman, 33, Barwell-rd., Sale, Cheshire, architect); additions, Northenden, for T. French and Sons, Ltd. (H. S. Fairhurst and Son, 55, Brown-st., architects); rebuilding portion of flats, Teignmouth-st. and Hewart-st., Collyhurst; extensions, for W. E. Cary, Ltd.; additions to Sunday-schools (F. H. Brazier (A.), 7, Market-st., Altrincham, architect); boiler-house to cleansing depot; sanitary block to service station, for D. Rosenfield, Ltd.; additions to dairy, for Mayfair Sterilised Milk Co., Ltd.; additions, for D. Moseley and Sons, Ltd.

Northallerton.—R.D.C. to adapt premises at Romanby for British Restaurant, at £435.

Northumberland. — E.C. propose canteens in several schools. W. W. Tasker, Mitford-rd. School, Morpeth, is County Architect.

Rawtenstall.—T.C. approved: Boiler-house and mill extensions, for Rhodeson, Ltd.; laboratory extension, Constablelee Works.

Rhyl.—U.D.C. propose conversion of premises for communal feeding centre. Plans by T. Lomax, Sur.

St. Ives.—T.C. propose painting 40 houses at Barley Close. E. G. Mitchell, Sur., to prepare specifications.

Salford. — Licensing Justices approved structural alterations to St. Phillip's Tavern, Oldfield-rd., Walker and Homfray, Ltd.—T.C. to seek permission of M.H. to complete houses on various sites. Plans by W. A. Walker, Boro' Eng.

Spenborough.—U.D.C. approved: Works extensions, for Gomersal, Dawson Bros., Ltd.; works extensions, for Cook, Sons and Co., Ltd.

Staffordshire.—C.C. to provide emergency feeding centres at Aldridge.

Stockport.—T.C. propose day nurseries at Midland-rd., Reddish. Plans by W. F. Gardner, Boro' Eng.

Stockton-on-Tees. — Kitching and Co., 21, Albert-rd., Middlesbrough, prepared plans for internal alterations to "Cricketers' Arms," for Kirkstall Brewery Co., Leeds.

Tamworth.—River Trent Catchment Board propose drainage scheme.

Uttoxeter.—U.D.C. to adapt premises for British Restaurant. Plans by S. Proud, Sur.

Wombwell.—Wombwell Main Colliery Co., Ltd., propose erection of dining-hall; also extension of colliery workings.

Reservation of Nut and Bolt Riveters.

The Ministry of Works state that to prevent a shortage of nut and bolt riveters, five categories of such workers will retain the present reservation age of 18, and will not go up on October 1. These five categories are: Cutter (nut, bolt, rivet), B.18, C.18; bolt header (hot), B.18, C.18; stripper (nut, bolt, rivet), frazes B.18, C18; heater, feeder (nut, bolt, rivet), B.18, C.18; Cold header (bolt, rivet), B.18, C.18.

A Mayoral Election.

Councillor Henry Lawrence Gradon, head of the old-established building firm of J. G. Gradon and Sons, will be Mayor of Durham City in the forthcoming municipal year. His late father, Alderman J. G. Gradon, held the chief civic office in 1916, and his grandfather, Mr. George Gradon, in 1875. A Fellow of the Institute of Builders and Member of the Royal Sanitary Institute, Councillor Gradon is a past president of the Sunderland District Master Builders' Federation.

DON'T TENDER UNSUCCESSFULLY

SECURE CONTRACTS WITH

THE STEEL SCAFFOLDING CO., LTD.

23, OATLANDS DRIVE, WEYBRIDGE, SURREY.

'Phone: Walton-on-Thames 614 and 615.

TENDERS

The Editor welcomes authentic information for this feature from architects, surveyors or contractors. Items should reach 4, Catherine-street, Aldwych, W.C.2. not later than Tuesday morning.

Tenders for A.R.P. work will be found under "A.R.P. Schemes."

* *Denotes accepted.*
† *Denotes provisionally accepted.*
‡ *Denotes recommended for acceptance.*
§ *Denotes accepted subject to modification.*
¶ *Denotes accepted by H.M. Government departments.*

Blyth.—Rest centre and canteen, for T.C. T. Wilson, Boro' Eng.: *Direct Labour.

Bridgnorth.—Improvement of sewage disposal, Vicarage-la., Cockshutt, for R.D.C.: *J. W. Doughty, Highley, Bridgnorth.

Darfield.—Exterior painting of 136 houses, for U.D.C. F. Aldred, Sur.: *L. Smith, West Melton, nr. Rotherham, £651.

Darlington.—Maintenance shop, Cleveland-st.: *Palmers Hebburn Co., Ltd., Hebburn-on-Tyne.

Glasgow. — Painting works on various schools, for Corporation. John McNab, Education Offices, Bath-st., Glasgow, architect: Carntyne Public, *MacCulloch & Co., Ltd., Glasgow, £834 3s. 6d.; St. Patrick (boys'), *John Wilson & Co., Ltd., Port Dundas, £670 19s. 4d.; Barnard-st. Public, *Andrew Gardner, Jun., Bridgeton, £1,556 17s. 4d.; St. David's Catholic, *R. White & Sons, Ltd., Glasgow, £879 17s. 1d.; Broomloan-rd. Public, *Archibald Stirling & Sons, Glasgow, £887 15s. 11d.; Strathclyde Public, *James Hodgins & Sons, Ltd., Shettleston, £789 16s. 1d.

¶London (Air Ministry).—Contracts placed to the value of £500 or over for the week ended Sept. 6:—

Civil engineering work: Mears Bros. (Contrs.), Ltd., London; Tarmac, Ltd., Wolverhampton; G. Wimpey & Co., Ltd., Denham; R. Costain, Ltd., London; Constable Hart & Co., Ltd., London; Howard Farrow, Ltd., London; H. E. Pitt, Ltd., Sunderland.

Building work: John Hunt, Ltd., Gosport; T. J. Lovell & Son, Ltd., Gerrards Cross; W. Lawrence & Son, Ltd., London; G. H. Miller & Co., Ltd., London; H. Fairweather & Co., London; J. Chapman & Sons, Leicester; G. E. Wallis & Sons, Ltd., London.

Building and civil engineering work: J. Laing & Son, Ltd., London; W. & J. R. Watson, Ltd., Edinburgh; W. & C. French, Ltd., Buckhurst Hill.

Air filtration work: Wm. Richardson & Co., Ltd., London.

Heating work: Z. D. Berry & Sons, Ltd., Warrington.

General maintenance work: John Hughes (Contrs.), Ltd., Wrexham; Wm. Brown, Ormiston; F. B. Thackeray & Co., Ltd., Huntingdon; S. B. Wilding & Sons, Ltd., Lancaster; Hy. Kent (Bldrs.), Ltd., London.

¶London (Air Ministry).—Contracts placed to the value of £500 or over for week ended September 13:—

General maintenance work.—Stansell & Son (Taunton), Ltd., Taunton; Walter Firth, Ltd., Doncaster; F. Shepherd & Son, Ltd., York; Clyne & Mortimer, Peterhead; Sherfield Bros., Farnham.

Civil engineering work.—P. Bilton, Ltd., London; J. B. Edwards (Whyteleafe), Ltd., Kenley.

Building and civil engineering work.—Sir R. McAlpine & Son, Ltd., Hooton; W. & J. R. Watson, Ltd., Edinburgh, 6.

Building work.—E. Taylor & Co., Ltd., Littleborough.

Electrical work.—Transmission Lines and Cables Const. Co., Keighley; General Electric Co., Ltd., London.

¶London (War Dept.).—Contracts placed for week ended Sept. 6:—

Selkirkshire: Miscellaneous works, John F. Cobban, 41, Bowmont-st., Kelso, Roxburghshire.

Yorks: Concrete work, Thos. Feather & Co., Ltd., Six Lane Ends, Idle, Bradford.

Lancs: Hutting (erection) and concrete work, A. Ingham & Son, Crescent Sawmills, St. Annes-on-Sea, Lancs; J. Whittaker &

Sons (Blackburn), Ltd., Larch-st., Bastwell, Blackburn.

Lancs: Hutting (erection), Drake Bros. (Haslingden), Ltd., Holden Mill House, Haslingden, Rossendale, Lancs.

Lancs: Miscellaneous works, Rainey Bros., Ltd., Ironworks-rd., Barrow-in-Furness, Lancs.

Lancs: Miscellaneous work, F. W. Chandler, St. Annes-bldgs., Clifton-dr., St. Annes-on-Sea, Lancs.

Notts: Miscellaneous work, F. Sisson & Sons, Ltd., 32, Cromford-rd., Langley Mill, Notts.

Notts: Hutting (erection), Thos. Smith & Sons (Mansfield), Ltd., Chesterfield-rd. North, Mansfield, Notts.

Leics: Building work, Jaques & Greeves, Springwell-la., Doncaster.

Suffolk: Miscellaneous works, Wm. C. Reade, 70-74, High-st., Aldeburgh, Suffolk.

Essex: Miscellaneous works, J. C. Flaxman & Sons, Ltd., 114, Southchurch-rd., Southend-on-Sea.

London: Miscellaneous works, Haines & Warwick, Ltd., Vicarage Works, Bradford-rd., Seven Kings, Essex.

Kent: Miscellaneous works, Gough Cooper & Co., Ltd., Wilmington House, Wilmington, Kent.

Kent: Hutting (erection), Saunders (Contrs.), Ltd., 204, Station-rd., Rainham, Kent; Wraight, Ltd., 23, London-rd., Sittingbourne, Kent; J. C. Elkington, Ltd., 14, Avebury-av., Tonbridge, Kent.

Kent: Miscellaneous work, Mears Bros. (Contractors), Ltd., 154-8, Sydenham-rd., London, S.E.26.

Surrey and Hants: Miscellaneous works, G. H. Stone, 2b, Bournemouth-gdns., Folkestone.

Wilts: Miscellaneous work, W. H. Soper, Ltd., 18, High West-st., Dorchester.

Devon: Miscellaneous works, F. J. Stanbury, Alexandra Works, Alexandra-rd., Mutley, Plymouth.

Cornwall: Miscellaneous work, J. Williams & Co. (Cornwall), Ltd., South-st., St. Austell, Cornwall.

Co. Londonderry: Hutting (erection), R. Colhoun, Ltd., Society-st., Coleraine, Co. Londonderry; R. J. Campbell (London), Ltd., 33, Scottish Provident-bldgs., Belfast.

Co. Down: Hutting (erection), R. Cullen & Sons, Church-st., Portadown, Co. Armagh; Wm. Dowling, Ltd., 106-8, Cromwell-rd., Belfast.

Co. Fermanagh: Miscellaneous work, T. Lindsay, 2, Richview-st., Belfast.

Co. Armagh: Hutting (erection), H. Cole, 13, The Mall, Newry, Co. Down; J. & R. W. Taggard, 24, Cliftonville-rd., Belfast.

Mitford and Launditch. — Painting 52 houses, for R.D.C. W. J. Barton, Clerk, The Guildhall, East Dereham. L. A. Taylor, Sur.: *J. H. Neal, N. Elmham (8 houses), £28; *E. Melton, Beetley (8 houses), £35; *J. Mortimer, E. Tuddenham (4 houses), £16 18s.; *J. Drew, Brisley (4 houses), £15 10s.; *H. G. Lomax, Lower Hellesdon, nr. Norwich (28 houses), £124 12s.

Motherwell-Wishaw.—Additions to Wishaw Catholic School. William Watt, County Architectural Offices, Albert-st.: Excavation, brick and building works, etc., *Scott & Co., Ltd., Motherwell, £1,481 14s. 10d.

Newcastle-on-Tyne. — Canteen, St. Lawrence-rd., for the Limmer & Trinidad Lake Asphalt Co., Ltd.: *Bewley & Scott, Dunston-on-Tyne.

Pickering.—Painting houses and other property, for U.D.C.: *G. R. Bower, Pickering, £115.

Repton.—External painting of 114 houses, for R.D.C. A. P. Hancock, M.Inst.M.&Cy.E., Eng. and Sur., The Poplars, Rolleston-rd., Burton-on-Trent: *J. Skellet (26 houses), Knowles Hill, Rolleston-on-Dove, nr. Burton, £115 0s. 6d.; *A. Swindell & Son (32 houses), Linton, nr. Burton, £135 4s.; *R. Skevington & Sons (44 houses), Keys-st., Derby, £213; *R. A. Warren (12 houses), Newhall, nr. Burton, £70 5s.

St. Ives. — Exterior painting of Council offices, for T.C.: *Melhuish & Saunders.

Wellington.—Conversion of a portion of farm into fire station, etc., for R.D.C. J. B. Cooper, F., 177, Corporation-st., Birmingham. *Parsons & Morrin, Ltd., 133, Belgrave-rd., Birmingham, £5,497.

Whitby. — Repair and redecoration of White House Hotel, for U.D.C.: *Breckon Bros., Whitby, £150.

Whitby.—Adaptation of Church-st. School as British Restaurant, for U.D.C.: *Breckon Bros., Whitby.

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